SHRUBS

for Amateurs

W. J. BEAN

REVISED BY S. A. PEARCE

SHRUBS
for Amateurs

The object of this book is just what its title indicates — to provide all necessary information about shrubs for the amateur gardener. It is a standard work on the subject, originally written in the 1920s by the late W. J. Bean, formerly Curator of the Royal Botanic Gardens, Kew, and one of the world's leading experts on garden shrubs and trees. A second edition appeared in 1935 and now the book has again been revised and enlarged, this time by a modern authority, S. A. Pearce, Deputy Curator at Kew.

There are chapters on the preparation of the ground, on problems of transplanting, on pruning and propagation, on the grouping and arrangement of shrubs, and on the various types that are likely to flower best under differing conditions. Finally, there are complete descriptive lists of all shrubs that the owner of a small garden may want to cultivate.

As Mr Pearce says in his new introduction, flowering shrubs are today in greater demand for the smaller garden than ever before. He has added much information about the newer varieties that may now be obtained, some of which, specially photographed, are among the thirty-two plates that illustrate the book.

Cover illustration: Camellia japonica, a handsome and hardy shrub.

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FOR AMATEURS

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SHRUBS
FOR AMATEURS

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THIRD EDITION

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COUNTRY LIFE LIMITED LONDON

First published in 1925
by Country Life Limited
*Tavistock Street London W.C.*2
Printed and bound in England
by Wyman & Sons Ltd
London and Reading

Second edition, 1935
Third edition, 1955

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INTRODUCTION

TO THE SECOND EDITION

THE cultivation of hardy shrubs is a branch of horticulture in which the interest of amateur gardeners has very much increased during the present century, and never before has the attractiveness of gardens been so dependent on them. The present work has been written with the object of affording information in regard to their cultivation, to help in the selection of the most beautiful kinds, also to give some idea of the immense variety there is to select from. This information is given in simple, untechnical language, and will, it is hoped, be valuable not only to those who have already some acquaintance with the subject but equally so to those who are approaching it for the first time.

Nature objects to sharp dividing lines, and none exists between trees and shrubs, just as there is none between shrubs and herbs. A rough definition of a shrub would be—*a woody plant that does not form a single clean trunk.* But it is in reality more a matter of size; whether a given plant has one or several stems is, as we know, very often a matter of accident. Some species, too, are like the holly, which ultimately becomes a tree, but can scarcely be regarded as anything but a shrub in the early stages of its existence. Therefore it and several of similar character are included in the present volume.

In this book an attempt has been made to include a notice, if only a brief one, of nearly all the genera containing shrubs, so that the reader can get some idea of the range of the subject; but a rigorous selection has been made as regards species, especially in large genera like *Berberis*, *Cotoneaster,* and *Spiraea.*

Plants, like most other things, cost more than they did, but once the initial expense has been met there is no form of gardening that will provide greater pleasure at such a low expenditure, either of money or time, as the cultivation of shrubs. It is a matter of regret, therefore, that in so many small gardens, even today, the shrubs are so dull and uninteresting. Even villa gardens in the outer suburbs of London and other large cities could be made much more attractive than they are, whilst

gardens of an acre or more in extent could, without unduly sacrificing the lawn area, entertain a large and very excellent company.

In regard to the word 'hardiness' as used in the following pages, it should be taken as applying to our average climate—such, for instance, as that of ordinary situations between the Thames and the Trent. It may be mentioned, too, that the heights of shrubs as given here refer to the same area. In the southern and western maritime counties the stature of many species is higher.

W. J. Bean

INTRODUCTION
TO THE THIRD EDITION

Since the second edition of this book was published in 1935, many changes, brought about by the war and the post-war period, have taken place in the horticultural world. Perhaps one of the most remarkable of them is the present-day demand for a more permanent form of embellishment in gardens, and particularly the amateur's garden. This has given a tremendous stimulus to the interest displayed in flowering shrubs, with the result that they have become increasingly popular and in greater demand for the smaller garden than ever before.

That shrubs are among the most useful of decorative subjects is now generally realized, and the fact that, once purchased and planted, their maintenance in both time and labour is less costly than with any other form of decorative gardening, is perhaps one of the main reasons for their popularity. Again, with such a wide selection of material available, it is possible to select shrubs that will thrive in almost any type of soil and also in the uncongenial surroundings of large cities and towns, where industrial pollution is a damper to many forms of gardening.

With increased popularity there is always the demand for something new. In this revised edition, therefore, are included further species, varieties and hybrids that, although not necessarily new to cultivation, are in the opinion of the reviser suitable for culture in the average garden and of special interest to the keen amateur gardener. With a subject that covers an exceptionally wide field, additions can always be made, whilst scientific research, particularly with aids to propagation, balanced seed and potting composts, etc., still further widen the subject.

As in the previous edition, the work deals only with shrubs as such, and the inclusion of other shrubby and sub-shrubby ornamental subjects such as climbing shrubs and those that can be adapted as such, has not been deemed necessary. Ornamental trees are dealt with in a companion volume.

Unfortunately, botanical names of shrubs, in common with those of other plants, are subject to alteration from time to time, and changes have necessitated certain alterations in nomenclature in this new volume.

So far as has been possible, the nomenclature adopted by Mr W. J. Bean in his seventh edition of *Trees and Shrubs Hardy in the British Isles*, and published since his death in 1947, has been adopted in the preparation of this new edition of *Shrubs for Amateurs*.

Illustrations which today, perhaps more so than ever before, play a most important part in any reference book, have been increased by the inclusion of a number of photographs, chiefly of shrubs of more recent introduction and those of special merit.

S. A. Pearce,
Deputy Curator, Royal Botanic Gardens, Kew

1954

I

CULTIVATION

THERE is no easier phase of gardening than the cultivation of the ordinary type of shrub such as we are, in the main, concerned with in this work. What is needed chiefly is attention to a few essential details. There are, of course, many shrubs that need particular conditions to enable them to show their best. Some, for instance, will appreciate every ray of sunlight they can get, such as roses, brooms, yuccas, or rock roses; some, like many rhododendrons, thrive best with some protection from full sunshine. Then the vast majority of the heath family detest lime or any calcareous substance in the soil. But on the whole the needs of the ordinary shrub are few and simple, and, given a good soil to start with, are easily supplied. The best of all soils is a sound loam of good depth, neither so clayey, on the one hand, as to be uncomfortable to work in very dry or very wet seasons, or, on the other, so hot, sandy, or gravelly that plants suffer with every slight drought. If one can get an open friable loam—say two feet deep, well drained, and free from lime—the most important item in the cultivation of shrubs has been supplied. If it is naturally too heavy it can be improved by adding humus such as decayed leaves, straw manure, bonfire ashes, potting shed refuse, and so on. There is an old country saying that 'clay on sand makes land, but sand on clay is thrown away'. Perhaps the latter would not be true if one could get the two thoroughly mixed, but, as anyone knows who has tried it, that is a difficult matter with ordinary tools. The improvement of a poor hot soil is chiefly a matter of expense, and can only be done by adding heavier loam and manure.

One of the main causes of unsatisfactory results in shrub cultivation is an insufficient preparation of the soil at the commencement. One has to remember that when once a shrub has been put in its place, there, as a rule, it may have to stay, at least for some—one hopes for many—years. It is not like vegetable or herbaceous border cultivation, where an annual or biennial turn over of the soil enables the practitioner to redeem a previous perfunctory piece of work. Whether the site is a strip intended

for a shrubbery border, a large bed for a group, or intended merely for a single isolated plant on a lawn, the aim should be the same, and that is to provide about two feet deep of good soil well broken up as far out laterally as the roots are likely to extend. The ground, in a word, should be *trenched.*

For shrub cultivation I am convinced that ordinary trenching, where the top spit of one trench goes to the bottom of the next, and the bottom spit comes to the top, is a mistake; that is, if it is more or less virgin soil, or soil that has not been previously disturbed more than a spade's depth. It is not good for shrubs to be planted directly into raw earth brought to the top from one or two feet down. I recommend what is known as bastard trenching. In this the top twelve inches of soil is kept at the top and the lower twelve inches is turned over and well broken up, but left where it was. Here again we have always to bear in mind that, unlike the herbaceous border, one preparation has to suffice—it may be for many years, or for the lifetime of the shrub—and it is wrong to start it in cold inert soil which has never before been reached by the sun's light or heat.

If this trenching can be done a few weeks or even months before planting, so much the better. Time is thereby allowed for the ground to settle, and the roots have a more stable medium in which to commence their work. But it is not absolutely necessary; by treading and ramming a sufficient firmness around the roots can be secured.

A shrub always succeeds better in soil kept open and cultivated on the surface than it does where the root run is covered with grass. Shrubs planted on lawns, more especially those which are young and newly planted, should have an area around the central stem or stems kept loose and free from weeds, and this area should extend out at least to the circumference of the branches. If people object, as some do, to these bare patches of earth, and insist on having grass close up to the stems, they must put up with inferior, starved plants. When the shrub, if its nature allows it to do so, arrives at the state when its lower branches rest on the ground, weeds and grass are automatically smothered out, and it may be left to itself, but even then a hoe run through the surface soil beneath the branches to loosen it is all for the good of the plant by aerating the soil and letting in moisture more freely.

II

TRANSPLANTING

WHILST it can, of course, be done with solitary specimens, it is scarcely ever possible to plant a group of shrubs or a shrubbery border so that no replanting is needed. Plants have necessarily to be obtained small, and to give them sufficient space at the commencement for their full development would be to condemn oneself to some years' unsightliness of more or less bare earth. We are therefore almost compelled to plant with the idea in mind of a future thinning, and thus transplanting becomes an operation of great importance in the cultivation of shrubs. On its proper performance success in a great measure depends.

First, with regard to the time for transplanting. Deciduous shrubs are, with few exceptions, best transplanted just before the leaves fall in autumn. The soil then is still warm, and the sap is yet moving, and the roots get hold of the soil again immediately. Still, any open weather during the winter is quite suitable, and even in April, just as the buds are bursting, is a very good time for this operation, especially if the weather be showery. The chief thing is to avoid frosty periods or periods when there is a dry or parching wind.

Evergreens are not so accommodating as deciduous shrubs, because the leaf-bearing part of the plant keeps on transpiring moisture even in midwinter, and is, in consequence, much more dependent on the root system. Transplanting, therefore, should be done at a time when the roots can most quickly recover from the injury unavoidably done to them, and such a time is either in autumn before activity ceases, or late spring just after it has recommenced. To transplant a holly or an evergreen oak with naked roots in midwinter or during the dry winds of March is almost certainly to condemn it to death. The fine holly hedge west of the Palm House at Kew was planted during the month of May, and the losses were less than two per cent., although the plants had no soil on the roots and came from a considerable distance.

In these remarks on the time for transplanting it is assumed that the shrubs to be dealt with have their roots naked—that is, shaken practically

free of soil. Plants obtained from nurseries, unless they have been grown in pots or are of a type similar to the rhododendron, whose root system is so close and fibrous that the soil of itself clings to the plant, almost necessarily arrive in this condition. When they can be moved with large 'balls' of earth attached to them, the root system remains more or less intact and the problems of transplanting almost disappear. Such plants can be removed at practically any season except high summer. Often in taking a shrub from one part of a garden to another it is possible to carry it with a good-sized 'ball' of earth—if small, on a five-pronged fork that has been thrust underneath it; or, if larger, on a hand-barrow, truck, or trolley.

Shrubs, on the whole, are more safely transplanted than trees, because they usually have more fibrous roots near enough the stem or stems to be taken away with the plant. Shrubs that have to be removed should be uprooted carefully and as many of the finer roots as possible should be taken up and preserved. There is one thing to be said, however, about fibrous roots which is not generally understood, and that is the finest, thread-like ones rarely survive when once detached from the soil. It is of no use burying masses of such roots in a lump; they simply decay and fresh roots are pushed forth from the thicker, more woody roots behind them. If they can be dispersed or thinned out enough for soil to be worked in amongst them, all well and good; otherwise it is better to cut them off, as it is also with all bruised or lacerated roots of larger size. At planting time in nurseries a man may often be seen preparing shrubs for the ground by cutting or even chopping off shaggy masses of thread-like rootlets with a chopper—the latter a rough and ready method enforced by the necessity of keeping down expense, but one which experience has proved to be efficacious.

It may be said, 'Why, if these rootlets are useless once it has become impossible to restore their close union with the soil, are fibrous rooted plants the best, and why do people insist on having them?' It is because a shrub which has produced such roots freely has the faculty of reproducing them again after planting. If the finest hairlike roots cannot be saved, these will most quickly be reproduced by the slightly thicker ones that produced them before.

Good nurserymen replant their stock every two or three years because by doing so they prevent the formation of long, rambling roots whose

active feeding parts are at the very tips and therefore cannot be removed with the plant when it is finally sent away. Frequent transplanting, of course, checks vigour of top growth, but it keeps the small, really important roots in a compact area around its base. A wise and careful buyer will select plants with short-jointed, comparatively stunted growth and avoid those with long, sappy, vigorous shoots.

In replanting either trees or shrubs it is desirable that the holes intended for them should be large enough to enable the roots to be spread out evenly and to their full extent. Their feeding area is thereby made as large as possible to commence with. In covering them up, fine soil should be worked in amongst the finer roots, and it is very important that the soil immediately in contact with them should be trodden or rammed firmly. The lighter the soil the firmer it should be made, but even with that of a heavier nature it is necessary for soil and roots to be closely compacted. Where the ground is of a clayey nature, planting should not be done in wet weather if it can be avoided.

Although it is not so harmful for shrubs in general as for trees, overdeep planting has to be guarded against even with them. Shrubs with a single stem, such as hollies and many rhododendrons, are apt to decay at the 'collar'—that is, just above where the uppermost roots push from the stem—if they are planted too deeply. Nature intends the stems to be in free air, and perpetual darkness and damp often causes the bark to rot. Many apparently unaccountable deaths arise from this cause. The 'collar' should be at the level of the ground, or at most two or three inches below it. All rules have their exceptions, and shrubs that renew themselves by sucker growths from the base, like kerrias or many spiraeas, do not mind deep planting so much, whilst a few, like tamarisks or willows, that push out roots freely from their stems, are really benefited by it.

Shrubs, both deciduous and evergreen, whose roots have been severely damaged or reduced by transplanting, have their chances of survival much increased if the top growth is reduced. Especially is this the case with evergreens. In the case of a holly or a laurel, for instance, that has not recently been transplanted, I would cut away at least half the leaf-bearing part of the plant. In this way the balance between the supply of, and demand for, moisture and nutriment is in some measure restored.

III

ARRANGEMENT

CLOSELY associated with the question of transplanting is that of arrangement. Anything in the nature of colour schemes is not very easy in connection with shrubs in a small or moderate-sized garden. They are not like the typical herbaceous or alpine plant, which attains, or remains at, about the same height year after year, and can if necessary, by an annual or biennial overhauling, be kept at about the same size. Shrubs keep on growing, and it may take many years for them to reach their full size; and with regard to them, unless a small garden sacrifices variety unduly, there is no room for many large groups of one thing, however beautiful, although even the amateur we have in mind may indulge himself to the extent of a few special favourites grown in that way.

All the same, a little thought and investigation will enable the planter to avoid associating two shrubs that flower at the same time and whose colours clash, just as he can, on the other hand, associate two whose colours harmonize or make a pleasing contrast. This is particularly the case with rhododendrons and azaleas.

There is no place where the shrubs look better than on a lawn, either as single specimens if they are big enough, or as a number together if they are small. The green grass always makes a pleasing setting. A border or shrubbery of mixed kinds undoubtedly needs more thought to manage properly. If planted at the commencement close enough together to give an effect within a reasonable period, the time soon arrives when they begin to crowd each other and a thinning out or a replanting becomes necessary; the former, of course, is to be preferred because it involves less labour and less damage from root disturbance than the latter. The ideal method, if it can be managed, is to select sufficient plants to fill the border ultimately and allot to each sufficient space for its complete development, then to plant others around or amongst them to be regarded as temporary satellites, removable as the permanent ones require space.

A convenient temporary arrangement is to associate shrubs and herbaceous plants. The shrubs make an admirable background for the latter,

which can be gradually eliminated as the shrubs require more room. Even as a permanent scheme the plan has advantages, as some well-managed villa gardens show, although the roots of the shrubs are apt to be aggressive and to need curbing at the periodical overhauling of the border.

Value of Grouping. Where several individuals of one species or variety are available for planting, even if it be only three to six, it is better, with all but the largest, to plant them in one group than to sprinkle them separately along the shrubbery. More especially is this the case if they are small or slow growing. The grouping system has several advantages: a number of plants nearly always make a more effective display than a single one; a naturally small or dwarf shrub associated with its fellows is much less liable, from neglect or otherwise, to be overcrowded or possibly eliminated by more vigorous neighbours; when the plants require more room, this can be given by a thinning out, thereby avoiding the trouble and expense of an entire replanting; and even if they are left to crowd into a close mass the general effect is still maintained and no harm ensues. All this is very different from, and very superior to, the featureless mixture of crowded shrubs so often seen, where the strong growers and usually less interesting and beautiful sorts gradually usurp the whole area.

Another advantage conferred by planting in groups is especially noticeable in regard to those shrubs whose chief beauty is in their fruits, for it will usually be found that three or four such shrubs planted close enough together to cross-fertilize will produce finer crops of fruit than solitary ones.

An important matter in shrub cultivation is to have a proper appreciation of the desirability of picking the best spot for a particular shrub. The majority are, of course, well suited to ordinary exposure to full sunlight, but some, like the rhododendrons with big leaves, are always happier and their flowers last longer in moderate shade. Others, like cistuses and helianthemums, will only be a real success when grown where they get every ray of sunshine. Whilst vastly the greater number like good, deeply trenched soil, others flower better on poor dry soil. But for information on these matters the reader is referred to the notes on the plants themselves, which are given on later pages.

IV

PRUNING

It is a mistaken idea rather commonly held that pruning is an essential operation for shrubs in general. No doubt, judiciously done, it is useful and helpful, but as frequently practised it does more harm than good. Most shrubs are improved by cutting out dead and weakly branches and by thinning out overcrowded ones, thereby admitting more light and air to those that remain, and in that way often increasing the crop of blossom. But this is rather a sanitary operation than pruning in the technical sense of the word, and it has to be admitted that there are multitudes of beautiful shrubs in perfect health, and giving abundant crops of blossom that have not for years, perhaps never, been cut with the pruning knife.

When a shrub gets too big for its place it may be necessary to reduce its dimensions by one drastic pruning—a general shortening back of its branches. The best time to do this is in spring, just before growth commences, so that it has before it a full season to refurnish itself with leafy growth. Or, if it flowers not later than April, the cutting back can be deferred till the flowers are past, and so save a crop of blossom. Shrubs that flower on the current season's growth may have the shoots pruned back in late winter or early spring within a few inches of the previous year's wood. The crop of young shoots after such a pruning is sometimes so dense that an after-thinning of them is desirable. *Spiraea japonica*, *S. aitchisonii* and others of its type, *Hydrangea paniculata*, *Tamarix pentandra*, most of the hypericums, are all examples that may be pruned at this season. It is a useful means of keeping such shrubs dwarf or at a desired size for many years.

Shrubs, therefore, may be divided into two groups according to their method and time of flowering. Besides those just alluded to that flower from June onwards *on the current season's growth*, there is a second group consisting of those that flower in spring or early summer *on growths made the previous year*. Examples of both these groups are furnished by the garden roses: first, the hybrid perpetuals, teas, and hybrid teas, cut hard back every spring and, second, the ramblers of the polyantha and Wichu-

raiana types (Dorothy Perkins). The second group constitute the great majority of hardy shrubs, and for them the only pruning advisable is the thinning out of warn-out, weakly, or overcrowded branches already alluded to, and this need not be an annual operation. No shrub that flowers after April should be pruned by merely shortening back its shoots. To do this early enough to leave a full growing season would be to sacrifice the crop of flowers; to do it after flowering would shorten the growing season so much that the plant would suffer. Some shrubs, especially on walls, flower so early in the year, although on shoots made the previous summer, that they can be pruned after flowering and yet leave a full season for growth after it is done. *Forsythia suspensa* and *Prunus triloba plena* are examples.

V

PROPAGATION

The appliances possessed by the ordinary amateur are not, as a rule, in any way elaborate, yet a good deal of propagating can be done by simple means. Artificial heat is, of course, enormously useful; in establishments like nurseries and large gardens where a constant succession of young plants of numerous types and in large quantities is required it is essential. But where there is an unheated frame, a handlight, or even a bell-glass, the amateur can, by seeds or by cuttings, produce new stock of many shrubs. A considerable number, like species of ribes, roses, tamarisks, not to mention such things as willows and poplars—which are mostly trees—can be propagated by leafless cuttings put in the ground in late autumn.

The various means by which shrubs can be increased are as follows: division, seeds, cuttings, layers, grafting, budding, and inarching. The last three are not so easy for the amateur. They all involve the attachment of a portion of one plant (the scion) to another (the stock) and getting the two to unit organically, and they all require a certain amount of technical skill, not difficult to acquire indeed, but still necessary. Stocks, too, are not always easy to obtain in small numbers. On the whole, therefore, the further discussion of these methods of propagation is scarcely needed and will not be attempted in this short treatise, especially as, with few exceptions, shrubs are much better and longer lived when growing on their own roots.

Division. This is the simplest of all modes of increasing shrubs, consisting merely of pulling an old plant to pieces so that each piece has its share of roots and then replanting them. It is only possible, of course, with those shrubs of a tufted habit of growth which constantly renew themselves by sucker growths from the base, common examples of which are dwarf spiraeas, *Berberis aquifolium*, many wild roses, the snowberry, vacciniums, hypericums, species of *Rubus*, and bamboos. The best time for the operation is, for most shrubs, in early spring, and the occasion should be taken to break up and, if necessary, enrich the soil before

replanting. The division of bamboos is safest in September and May.

Layering. This is a very easy and sure means of propagation; in fact, it rarely fails, and it is relied on, even by experts, when other methods have failed with difficult subjects. It is sometimes a slow process, and it can only be practised on shrubs whose branches are low enough and supple enough to bring them to ground level, but most shrubs have those characteristics. The process consists simply in bringing a branch to the ground, fixing it firmly there by means of a peg or weight, and covering that portion about one foot from the end with two or three inches of soil. Before doing this it is desirable to put a notch or slit in that section of the branch to be buried, the object of this being to impede the flow of sap and thereby induce the formation of a callus and a quicker emission of roots. It is usually necessary that the terminal unburied part of the branch should be made firm and secure by attaching it to a stake thrust in the ground in a more or less upright position. With shrubs which are so brittle that notching or slitting is difficult to practise without the branch snapping through, the interruption of flow of sap can be effected by encircling it tightly with a piece of wire. A very useful aid in layering is to place a piece of stone or even a brick over the buried part of the branch; this helps to keep it firmly fixed and constantly moist—the two most essential matters in layering. This operation is best done in early spring just before growth commences, but rather than lose a season it may be done up to early autumn.

Seeds. The sowing and treatment of the seeds of shrubby plants does not differ from that of hardy plants in general. Pots, pans, or boxes are used according to the number it is desired to raise, and if possible they should have the protection of a cold frame or handlight. They will, of course, germinate in the open air as they have to do in Nature, but it is better where possible to ward off the various perils from weather and vermin. A little heat also helps and hastens their germination, and by being kept under cover they reach the size for handling more quickly and surely. A warning must be given against covering seeds too deeply with soil; they shold not be buried more deeply than their own diameter, which means that tiny seeds should be sown on the surface. Seeds are better shaded between sowing and germination, as this keeps them in a state of regular moistness without frequent watering, which is a great advantage.

The top layer of soil in which seeds are sown should be fine and sandy, and the pot or box, or whatever is used, should be thoroughly drained.

Cuttings. On the whole, propagation by cuttings is the easiest, quickest, and most general method of obtaining young shrubs. For one thing, a cutting, like a layer, being merely a bit of the parent plant, is certain to reproduce it exactly, which is more than can be said for many seeds. Variegated plants, weeping, dwarf or fastigiate ones, or forms of special excellence or distinctness, cannot be relied on to come true from the seed they develop. Cuttings, also, are more conveniently handled.

The great majority of shrubs are increased by cuttings taken between mid-June and the end of August. They are made of the leafy shoots of the year and of varying length according to their vigour and thickness. An average shoot—say one-eighth of an inch thick—will be made two to four inches long, the lower third of its length stripped of leaves, and then dibbled to about that depth in fine, very sandy soil. A heath, its stem being no thicker than a pin, must be made about one inch long. Although some cuttings—as, for instance, those of clematises—take root when cut off between the joints (forming what are called 'internodal' cuttings), the great majority are better made so that the base is immediately beneath a joint (or node).

The more quickly the nature of a plant enables its cuttings to emit roots, the softer and less 'ripe' the wood may be; and, conversely, the longer it takes to root, the firmer and riper the shoots have to be. In the same way, if gentle bottom heat can be given, the emission of roots is hastened and softer cuttings can be taken. Cuttings of shrubs, for instance *Philadelphus lemoinei*, helianthemums, and cistuses, made of soft young growths and given warmth and a close atmosphere, will take root in two or three weeks.

Where artificial heat or frames are not available, handlights or bell-glasses should be employed for leafy cuttings. The most necessary thing is that cuttings should be in a continuously close moist atmosphere. Until they push their own roots they have to subsist on moisture absorbed through the base of the cutting, and anything like excessive light or a dry atmosphere which excites evaporation from the leaves is detrimental. That is why a shaded handlight or bell-glass is so useful a help. Very fine sandy soil should be used, and a semi-shaded spot sheltered from drying winds is desirable.

As has already been intimated, cuttings of a considerable number of shrubs can be got to take root by putting them in the open ground. Privet, tamarisk, rose, and willow are easily rooted that way; in fact, the amateur may find a good deal of interest in experimenting with almost any shrub of which he wishes to have more plants by this method. He will be surprised at the number of successes. Such cuttings are better made longer than where warmth and protection are given—say six to twelve inches—and about half their length should be in the ground.

Certain shrubs like the sumachs (*Rhus*) are easily propagated by cuttings made of pieces of root, say a sixth to a quarter of an inch thick. They are cut about three inches long and buried in sandy soil almost to the tip, that part of the root nearest the stem being uppermost. Heat and a close atmosphere are desirable but not always necessary.

Hormone Preparations. In recent years much research has been carried out with chemical growth substances termed hormones, as an aid to quicker and easier rooting of cuttings. These substances in liquid, paste and powder forms under proprietary trade names, are available from horticultural chemists and sundriesmen. These preparations have given good results with many types of plants, particularly with soft and, half-ripened wooded cuttings. It is questionable if their use is of much advantage with hard-wooded cuttings, although treated cuttings of some subjects known to be difficult to root, have responded quite well.

The preparations should always be used in strict accordance with the manufacturers directions.

John Innes Composts. Standardized seed and potting composts made up according to the John Innes formula are now widely used for seed propagation and for growing plants in pots and other receptacles. Leaflets giving full information regarding the composts and their uses are obtainable for a small charge from the John Innes Horticultural Institution, Bayfordbury, Herts. The composts are also available ready mixed from horticultural sundriesmen and nurserymen. For those who wish to mix their own J.I. composts, the formulae are as follows:

Seed Compost

2 parts by bulk medium loam (sifted through a three-eighths of an inch sieve).

1 part by bulk horticultural peat moss.

1 part by bulk coarse sand.

Add to each bushel of this mixture one and a half ounces superphosphate of lime (eighteen per cent. phosphoric acid) and three-quarters of an ounce ground chalk or limestone.

Potting Compost

7 parts by bulk medium loam (sifted through a three-eighths of an inch sieve).

3 parts by bulk horticultural peat moss.

2 parts by bulk coarse sand.

To each bushel of mixture, add one and a half ounces hoof and horn meal (one-eighth of an inch grist), one and a half ounces superphosphate of lime, three-quarters of an ounce sulphate of potash and one ounce ground limestone or chalk.

The loam should always be steam sterilized. Sand should grade evenly up to one-eighth of an inch. Fine sands should not be used.

VI

SELECT LISTS OF SHRUBS

In order to save the reader laborious searching through the descriptive part of the book, it has been thought desirable to prepare lists of shrubs that may be required for special situations, for special purposes, for flowering at certain seasons of the year, or as having special qualities.

LATE AND EARLY FLOWERING SHRUBS

The great majority of shrubs flower during April, May, and June. Towards the end of June, when the rhododendrons have provided the last great floral display—the garden roses, of course, have still their great time to come—there is a sudden lapse from floriferousness to mere leafiness among ordinary shrubs. Yet, as the following list shows, there is a considerable number that may be relied on to flower during the other nine months of the year, and many of them are very beautiful. It should be mentioned that some of the July flowering ones are overlaps from June, and it has to be remembered also that the blossoming of those listed as between November and March is very dependent on the weather. Continuous hard weather may defer it one or even two months.

July and August

Abutilon vitifolium
Aesculus parviflora
Aplopappus ericoides
Buddleia davidii (*and vars*)
Calluna vulgaris (*and vars*)
Calycanthus occidentalis
Cassinia fulvida
Ceanothus 'Gloire de Versailles' (*and others*)
Clerodendron fargesii
Clerodendron trichotomum
Clethra alnifolia
Clethra delavayi
Clethra tomentosa
Colutea arborescens
Colutea media
Cornus paucinervis
Cytisus nigricans
Daboecia cantabrica
Dendromecon rigidum
Desfontainea spinosa
Erica ciliaris
Erica cinerea
Erica tetralix

Erica vagans
Escallonia exoniensis
Escallonia langleyensis
Escallonia macrantha
Escallonia virgata
Escallonia punctata
Escallonia rubra
Fremontia californica
Fuchsias
Genista aetnensis
Genista cinerea
Genista tinctoria
Genista virgata
Hedysarum multijugum
Hoheria lyallii
Hydrangea arborescens
Hydrangea hortensis
Indigofera decora
Indigofera gerardiana
Itea virginica
Jasminum fruticans
Jasminum revolutum
Lavandula spica
Lavandula vera
Leycesteria formosa
Ligustrum sinense
Linum arboreum
Lippia citriodora
Lupinus arboreus
Lyonia ligustrina
Magnolia virginiana
Magnolia sieboldii
Magnolia thompsoniana
Notospartium carmichaeliae
Olearia haastii
Paliurus spina-christi
Philadelphus (*many kinds*)
Potentilla fruticosa (*and vars*)
Punica granatum
Romneya coulteri
Romneya trichocalyx
Rosa wichuraiana
Rubus thyrsoideus
Rubus ulmifolius
Ruta graveolens
Salix bockii
Santolina chamaecyparissus
Santolina neapolitana
Senecio greyi
Senecio laxiflorus
Spartium junceum
Spiraea aitchisonii
Spiraea arborea
Spiraea discolor
Spiraea japonica (*and vars*)
Spiraea margaritae
Spiraea menziesii
Stewartia (*all the species*)
Tamarix pentandra
Teucrium fruticans
Ulex gallii
Ulex nanus
Veronica 'Autumn Glory'
Veronica traversii
Vinca major
Vinca minor
Yucca filamentosa
Yucca flaccida
Yucca gloriosa
Yucca recurvifolia

September and October

Abelia engleriana
Abelia graebneriana
Abelia grandiflora
Abelia longituba
Abelia schumannii
Amorpha canescens
Caryopteris clandonensis
Caryopteris mastacanthus
Caryopteris tangutica
Calluna vulgaris
Daphne mezereum grandiflora
Escallonia floribunda
Fatsia japonica
Hamamelis virginiana
Hibiscus syriacus
Hydrangea paniculata
Ligustrum lucidum
Ligustrum quihoui
Magnolia grandiflora
Perowskia atriplicifolia
Phlomis fruticosa
Vitex agnus-castus

November

Arbutus hybrida
Arbutus unedo (*and vars*)
Elaeagnus macrophylla
Elaeagnus pungens
Jasminum nudiflorum
Lonicera fragrantissima
Lonicera purpusii
Lonicera standishii
Vinca difformis

December and January

Chimonanthus fragrans
Erica carnea
Erica darleyensis
Hamamelis mollis
Viburnum bodnantense
Viburnum fragrans
Viburnum grandiflorum
Viburnum tinus

February and March

Arctostaphylos manzanita
Azara microphylla
Berberis aquifolium
Berberis japonica (*and vars*)
Cornus mas
Corylopsis pauciflora
Corylopsis spicata
Corylopsis veitchiana
Corylopsis willmottiae
Chaenomeles lagenaria (*on walls*)
Daphne mezereum
Dirca palustris
Erica arborea
Erica lusitanica
Erica mediterranea
Erica veitchii
Forsythia giraldiana
Forsythia intermedia (*and vars*)
Forsythia ovata
Forsythia suspensa
Garrya elliptica (*often earlier*)
Hamamelis japonica (*and vars*)

Hamamelis vernalis
Magnolia stellata
Nuttallia cerasiformis
Prinsepia sinensis
Prinsepia uniflora
Prunus spinosa
Prunus tomentosa
Ribes laurifolium
Stachyurus chinensis
Stachyurus praecox
Viburnum bodnantense
Viburnum fragrans
Viburnum grandiflorum

TWELVE GOOD DECIDUOUS FLOWERING SHRUBS

Ceanothus 'Gloire de Versailles'
Forsythia intermedia spectabilis
Genista cinerea
Genista hispanica
Halesia carolina
Hamamelis mollis
Magnolia sieboldii
Magnolia soulangeana
Philadelphus 'Virginal'
Ribes sanguineum splendens
Syringa 'Souvenir de Louis Spath'
Viburnum tomentosum plicatum

TWELVE GOOD EVERGREEN FLOWERING SHRUBS

Berberis aquifolium
Berberis darwinii
Berberis stenophylla
Cistus cyprius
Erica mediterranea
Kalmia latifolia
Osmanthus delavayi
Pieris floribunda
Pyracantha rogersiana
Veronica traversii
Viburnum tinus
Yucca recurvifolia

SOME GOOD SHRUBS FOR A SMALL GARDEN FACING NORTH BUT NOT SHADED OVERHEAD

Arundinaria nitida
Berberis aquifolium
Berberis darwinii
Berberis japonica
Berberis stenophylla
Camellia japonica
Forsythia intermedia spectabilis
Hypericum patulum forrestii
Magnolia stellata
Osmanthus delavayi
Philadelphus 'Virginal'
Pieris floribunda
Pieris japonica
Skimmia japonica
Viburnum tinus
Viburnum tomentosum plicatum

SHRUBS FOR SHADY PLACES (SUCH AS UNDER THE BRANCHES OF TREES)

Aucuba japonica
Berberis aquifolium
Euonymus japonicus
Euonymus radicans
Gaultheria shallon
Hedera helix (*shrubby state*)
Hypericum calycinum
Ilex aquifolium

Ligustrum ovalifolium
Ligustrum vulgare
Rhododendron ponticum
Ribes alpinum
Rubus thyrsoideus plena
Rubus ulmifolius bellidiflorus
Ruscus aculeatus
Ruscus hypoglossum
Sambucus nigra
Sarcococca humilis
Sarcococca ruscifolia
Sarcococca saligna
Viburnum tinus
Vinca major
Vinca minor

SHRUBS FOR THE ROCK GARDEN

Conifers, of which there are many dwarf forms suitable, are omitted from the following list, as being outside the range of this work; nor are any of the many suitable rhododendrons included, the reader being referred to Mr E. H. M. Cox's work, *Rhododendrons for Amateurs*.

Abelia engleriana
Abelia longituba
Abelia schumannii
Andromeda polifolia
Anthyllis montana
Arctostaphylos uva-ursi
Astragalus massiliensis
Astragalus tragacantha
Berberis buxifolia nana
Berberis candidula
Berberis darwinii nana
Betula nana
Bruckenthalia spiculifolia
Calluna vulgaris (*and vars*)
Cassandra calyculata nana
Cassiope tetragona
Cistus loretii
Cistus purpureus
Cotoneaster congesta
Cotoneaster humifusa
Cotoneaster thymaefolia
Cytisus ardoinii
Cytisus beanii
Cytisus kewensis
Cytisus purgans
Cytisus purpureus
Cytisus versicolor
Daboecia cantabrica
Daphne blagayana
Daphne burkwoodii
Daphne cneorum
Daphne neapolitana
Empetrum nigrum
Ephedra gerardiana
Ephedra nebrodensis
Erica carnea (*and vars*)
Erica ciliaris (*and vars*)
Erica cinerea (*and vars*)
Erica darleyensis
Erica tetralix
Erica vagans (*and vars*)
Erinacea pungens
Euonymus radicans kewensis
Fuchsia pumila
Gaultheria procumbens
Gaultheria veitchiana

Gaylussacia dumosa
Genista hispanica
Genista lydia
Genista pilosa
Genista sagittalis
Genista tinctoria flore pleno
Helianthemum alyssoides
Helianthemum formosum
Helianthemum umbellatum
Helianthemum vulgare (*and vars*)
Ilex crenata mariesii
Jasminum parkeri
Kalmia angustifolia nana
Kalmia glauca
Lavandula vera nana
Leiophyllum buxifolium
Linnaea borealis
Linum arboreum
Lithospermum prostratum
Moltkia petraea
Myrsine africana
Oxycoccus macrocarpus
Oxycoccus palustris
Philesia buxifolia
Phyllodoce (*all*)
Polygala chamaebuxus
Potentilla davurica
Potentilla fruticosa (*and vars*)
Rhodothamnus chamaecistus
Rosa nitida
Rosa spinosissima
Santolina chamaecyparissus
Spiraea japonica bumalda
Vaccinium vitis-idaea
Veronica carnosula
Veronica cupressoides
Yucca filamentosa
Yucca flaccida

SHRUBS FOR DRY PLACES AND POOR SOILS

Adenocarpus decorticans
Anthyllis barba-jovis
Aplopappus ericoides
Astragalus massiliensis
Astragalus tragacantha
Atriplex halimus
Caragana arborescens
Cistus (*all*)
Colutea arborescens
Colutea media
Cystisus scoparius (*and vars*)
Dendromecon rigidum
Ephedra gerardiana
Ephedra nebrodensis
Erinacea pungens
Genista aetnensis
Genista hispanica
Genista lydia
Genista pilosa
Genista tinctoria
Helianthemum (*all*)
Linum arboreum
Lycium chinensis
Moltkia petraea
Rosmarinus officinalis
Santolina chamaecyparissus
Spartium junceum
Teucrium fruticans
Ulex europaeus flore pleno
Ulex gallii

Abeliophyllum distichum

Buddleia alternifolia

Caryopteris clandonensis

Below, left : Camellia japonica

Below, right : Camellia saluenensis 'Bow Bells'

Ulex nanus
Yucca filamentosa
Yucca flaccida
Yucca gloriosa
Yucca recurvifolia

SHRUBS FOR AUTUMN COLOUR

Acer ginnala (red)
Acer palmatum (*and its varieties*) (red)
Amelanchier florida (yellow)
Aronia arbutifolia (red)
Asimina triloba (vinous red)
Berberis thunbergii (red)
Berberis vulgaris (red)
Berberis wilsonae (red)
Disanthus cercidifolia (claret)
Enkianthus campanulatus (red)
Enkianthus cernuus (red)
Enkianthus deflexus (red)
Enkianthus perulatus (red or yellow)
Enkianthus subsessilis (red)
Euonymus alatus (rosy scarlet)
Euonymus europaeus (purplish-red)
Euonymus latifolius (purplish-red)
Fothergilla gardenii (red)
Fothergilla major (yellow)
Fothergilla monticola (red)
Hamamelis virginica (yellow)
Rhus cotinoides (orange and claret)
Rhus glabra (red)
Rhus toxicodendron (red)
Rhus trichocarpa (red)
Rhus typhina (red)
Rosa nitida (red)
Spiraea thunbergii (red)
Stephanandra tanakae (orange)
Vaccinium arctostaphylos (purplish-red)
Vaccinium corymbosum (red)
Viburnum lantana (red)
Viburnum opulus (red)

SHRUBS WITH HANDSOME OR CURIOUS FRUITS

Acanthopanax (all have black fruits)
Aegle sepiaria (small oranges)
Arbutus unedo (orange-red)
Aronia arbutifolia (red)
Aucuba japonica (red)
Berberis aquifolium
Berberis buxifolia
Berberis candidula
Berberis darwinii
Berberis gagnepainii
Berberis hookeri
Berberis stenophylla
Berberis verruculosa
(covered with purple bloom like a plum)
Berberis dictyophylla
Berberis polyantha
Berberis prattii
Berberis stapfiana
Berberis subcaulialata
Berberis vulgaris
Berberis wilsonae
(red)
Callicarpa giraldiana (bluish-lilac)
Clerodendron fargesii (blue)
Clerodendron trichotomum (blue)
Colutea arborescens (pale brown bladders)
Colutea media (pale brown bladders)

Cotoneaster (*see species enumerated on p. 58, all having red fruits*)
Decaisnea fargesii (blue)
Elaeagnus multiflora (red)
Elaeagnus umbellata (red)
Ephedra nebrodensis (red)
Euonymus europaeus (red and orange)
Euonymus latifolius (red and orange)
Hippophaë thamnoides (orange)
Hymenanthera crassifolia (white, tinged with blue)
Ilex aquifolium (*and most of its varieties*) (red)
Ilex aquafolium fructo-luteo (yellow)
Ilex serrata (red)
Ilex verticillata (red)
Leycesteria formosa (reddish-purple)
Lycium chinense (scarlet or orange)
Paliurus spina-christi (brown) winged)
Pernettya mucronata (crimson, purple, white)
Pyracantha (mostly scarlet, some orange or yellow)
Rhus glabra (red)
Rosa alpina
Rosa macrophylla
Rosa moyesii (red)
Rosa omeiensis
Rosa rugosa
Skimmia japonica (red)
Staphylea (all brown bladders)
Stranvaesia (all red or orange-red)
Symphoricarpus racemosus (white)
Viburnum betulifolium (red)
Viburnum davidii (blue)
Viburnum lobophyllum (red)
Viburnum opulus (red)
Zanthoxylum planispinum (red)

VARIEGATED AND COLOURED SHRUBS

1. With White- or Cream-Coloured Variegation

Acanthopanax pentaphyllum variegatum
Arundinaria fortunei
Buxus sempervirens argentea
Cornus alba sibirica variegata
Diervilla florida variegata
Euonymus radicans 'Silver Queen'
Hibiscus syriacus variegatus
Ilex aquifolium (*see list on p. 79*)
Kerria japonica variegata
Pieris japonica variegata
Sambucus nigra variegata
Vinca minor argenteo-variegata

2. With Yellow Variegation

Arundinaria auricoma
Cornus alba spaethii
Cornus mas elegantissima
Elaeagnus pungens aureo-variegata
Euonymus japonicus ovatus aureus
Ilex aquifolium (*see list on p. 79*)

Ligustrum ovalifolium aureum
Philadelphus coronarius argenteo-variegatus
Symphoricarpus orbiculatus variegatus
Syringa emodi variegata
Vinca minor aureo-variegata

3. With Leaves Entirely or Almost Entirely Yellow

Acer japonicum aureum
Calluna vulgaris aurea
Diervilla florida looymansi aurea
Ribes alpinum foliis aureis
Ribes sanguineum brocklebankii
Sambucus nigra foliis aureis

4. With Leaves Entirely Purple or Reddish

Acer palmatum atropurpureum
Berberis vulgaris purpurea
Corylus maxima atropurpurea
Diervilla florida purpurea
Osmanthus aquifolium purpureus
Rhus cotinus purpurea
Rosa rubrifolia

5. With White or Silvery Leaves

Atriplex halimus
Elaeagnus argentea
Hippophae rhammoides
Salix repens argentea
Santolina chamaecyparissus
Santolina neapolitana

6. With Coloured Bark in Winter

Berberis virescens (orange-red)
Cornus alba and its varieties (red)
Cornus stolonifera (red)
Rubus giraldianus (white)
Salix vitellina (yellow)
Salix vitellina var. britzensis (red)
Stephanandra tanakae (bright brown)

VII

A DESCRIPTIVE LIST OF SHRUBS

ABELIA

Two kinds of abelia are hardy in our average climate—*A. grandiflora*, a hybrid, and *A. triflora*, a Himalayan species. The former is the better, being an evergreen some 5 or 6 feet high with glossy, dark green leaves and terminal clusters of white flowers tinged with pink and shaped like tiny foxgloves. *A. triflora* has also white flowers with a rosy tint, very fragrant, but is a taller shrub and deciduous. The most beautiful of the abelias is a Mexican species, *A. floribunda*; this has pendulous flowers of a glowing rosy red and 1½ to 2 inches long, hanging from beneath the branches; unfortunately it is not very hardy and should be grown on a wall or fence. For the milder counties it is admirable, and specimen plants up to 18 feet in height have been recorded when grown on the wall of a house. Other species introduced from China are *engleriana*, *schumannii*, and *graebneriana*, all worth growing in the milder counties. The abelias are useful in flowering from June onwards. *A. grandiflora* will continue up to October. They require a good loamy soil, a sunny sheltered spot, and are easily increased by cuttings.

ABELIOPHYLLUM DISTICHUM

Introduced in 1924, this deciduous shrub from Korea should become popular as it becomes more widely known. It grows from 3 to 4 feet high and produces axillary racemes of pale pink flowers on long shoots that are produced each year. During a mild season the flowers appear early in February. Although perfectly hardy the flowers are sometimes damaged by frost, and for this reason a sheltered position is desirable, while excellent results can be obtained by training the shrub on a wall or fence.

To ensure the development of strong flowering growth, fairly hard pruning is necessary each year after flowering. A well drained loamy soil suits this shrub, and propagation by half-ripened or ripened cuttings presents no difficulty, both rooting freely in a cold frame.

ABUTILON

A. vitifolium is a Chilean shrub only hardy in the south, but may be tried on a wall or warm corner elsewhere. It grows usually 8 to 15 feet high and has beautiful flowers 3 inches wide resembling those of a single hollyhock and pale purplish-blue; in one form (*alba*) they are snowy-white.

A. megapotamicum (*vexillarium*), a species from Brazil, bears numerous drooping scarlet and gold flowers during the summer and is an attractive shrub for a sheltered position. It thrives well in the south and south-western districts, and near London succeeds when planted on a wall in full sun. Abutilons may be propagated from half-ripened cuttings during July inserted in sandy soil in a warm propagating frame.

ACACIA (WATTLE)

The hardiest of the acacias is *A. dealbata*, the silver wattle from New South Wales and Tasmania, notable for the beauty of its silver-white feathery foliage and trusses of fragrant yellow flowers. It is at its best in the warm south-west counties, but even in Suffolk, in a warm, sheltered, sunny corner, it grows and flowers well, although a severe winter may cut it to the ground.

ACANTHOPANAX

A well-marked group belonging to the aralia family, with often prickly or bristly steams. The leaves are sometimes made up of several leaflets, sometimes simple, but deeply lobed. The flowers are small, dullish white or greenish, produced in ball-like clusters, and are followed by similarly shaped clusters of black fruits. The best are *henryi, leuchorrhizus*, and *pentaphyllus*, the last of which has a pretty variegated form. Natives of China and Japan, and all of bushy habit and up to 10 feet high.

ACER (MAPLE)

Most of the maples are trees, but *A. ginnala* is sometimes seen as a large shrub, and is valued for the rich red of its autumn tints. *A. palmatum*, the Japanese maple, although strictly a tree, is in this country mostly of shrubby form and greatly admired for the beautiful cutting and high colouring of the leaves as represented by the many forms introduced from Japan. Varieties to be recommended are *aureum*, *roseo-marginatum*,

aturporpureum, sanguineum, and *dissectum*. They need a sheltered situation, a good soil, and are best planted singly or well apart, so that their graceful form may freely develop. *A. japonicum aureum* is a good yellow-leaved shrub.

ADENOCARPUS DECORTICANS

This singularly beautiful shrub belongs to the broom family and is a native of Spain. It produces in May and June a remarkable profusion of golden-yellow blossom. Unfortunately it is not very hardy, and near London needs a south wall, and even in the mildest districts the fullest exposure to sunshine.

AEGLE SEPIARIA
(CITRUS TRIFOLIATA) (PONCIRUS TRIFOLIATA)

A near relative of the orange and lemon, and a deciduous shrub 8 to 12 feet high, formidably armed with stiff stout spines 1 to 2 inches long. Leaves usually of three leaflets; flowers pure white, scented, 1½ to 2 inches wide. The fruits resemble small oranges, but are not edible. A hybrid between this and the orange is commonly known as 'citrange'. May.

AESCULUS

Most of the horse-chestnuts and their allies, the 'buck-eyes', are trees, but a very valuable shrubby species is *A. parviflora*, which has horse-chestnut-like leaves and erect racemes 8 to 12 inches high of white flowers with pink stamens and red anthers, opening in July and August. This shrub, a native of the south-east United States, grows about 10 feet high, is leafy to the ground, very bushy, and admirable as a lawn specimen. *A. austrina, A. splendens,* and *A. pavia* are also handsome species often shrubby in habit, all with red flowers. They like a rich loamy soil.

ALNUS (ALDER)

For cold damp situations there is a shrubby alder, *A. viridis*, which may be grown under the same conditions as willows and poplars. Coming from inclement regions in Europe and North America, it is very hardy. Height 6 to 10 feet.

AMELANCHIER

Although best known in gardens by *A. canadensis*, a small tree, the

amelanchiers can be represented also by some half a dozen shrubby kinds. The best of them is *A. vulgaris* from the Alps, which has pure white flowers 1½ inches wide; but two American species, *oblongifolia* and *florida*, are also well worth cultivation. All have short racemes of pure white blossom opening in April and May. They are very hardy and thrive well under town conditions. The foliage is richly coloured in autumn, and very showy.

AMORPHA CANESCENS (LEAD PLANT)

This, the only amorpha worth mention here, grows about 3 feet high and has dull green, pinnate leaves 2 to 3 inches long and purplish-blue flowers densely set on erect spikes 3 to 6 inches high opening in late summer. It belongs to the broom family, but the flowers are remarkable in having only one (the standard) petal, an amorphic condition to which the generic name refers. A native of North America.

ANDROMEDA POLIFOLIA (BOG ROSEMARY)

A pretty evergreen 1 to 2 feet high with dark green rosemary-like leaves, whitish beneath, and pitcher-shaped pink flowers, ¼ inch long, produced in May in compact clusters at the end of the shoots. It is wild in the peat bogs of north Europe, including Britain. It needs a moist lime-free soil, preferably peaty. (For the other shrubs often called *Andromeda*, see *Pieris, Leucothoë, Cassiope*, and *Zenobia*.)

ANTHYLLIS (KIDNEY VETCH)

Three species are grown: *A. barba-jovis* (Jupiter's beard), an evergreen only hardy enough for a wall, where it will grow 10 feet high; it has pinnate leaves 1½ to 2 inches long, made up of numerous leaflets which are covered with silvery hairs; flowers pale yellow crowded in a cluster 1 inch wide. It comes from the Mediterranean region, as does also *A. hermanniae* (kidney vetch), a deciduous shrub about 2 feet high with yellow flowers and hardier. A third hardy species, *A. montana*, comes from the mountains of southern Europe and forms low, rather prostrate tufts with silvery foliage and hemispherical heads of rosy-pink flowers. A pretty rock garden plant. They belong to the broom family, and do not require a rich soil, although a warm well-drained one is most suited to their needs.

APLOPAPPUS ERICOIDES

A Californian evergreen only really hardy in the south and west and needing wall protection near London. It has very small, heath-like leaves and yellow flower-heads ½ inch wide expanding in August and September. Pretty, and interesting also as one of the shrubby members of the composite (daisy) family. Full sunshine.

ARBUTUS (STRAWBERRY-TREE)

Strictly speaking trees, the arbutuses in cool localities are often no more than large shrubs—handsome evergreens of densely leafy habit, admirable for giving shelter and background. The commonest are *A. andrachnoides* and *A. unedo*, the latter wild on the shores of the Killarney lakes. All have pitcher-shaped white or pink-tinted flowers about ¼ inch long in clusters, and *A. unedo* has often fine crops of orange-red strawberry-like fruits, which, although edible, are not very palatable. Its varieties *compacta* and *integerrima* are true shrubs, as is also a variety of *A. andrachnoides*, called *quercoides*, with curious deeply toothed leaves. Although belonging to the heath family, they grow in limestone regions, and thrive in most soils.

ARCTOSTAPHYLOS

One species of this genus, which belongs to the heath family, is wild in north Britain—the evergreen *A. uva-ursi*, the bearberry, which succeeds well in our gardens; it is a trailing shrub, pretty as a ground cover, with leathery leaves ½ to 1¼ inches long and pink, pitcher-shaped flowers ⅙ inch long, borne in terminal clusters followed by red fruits. Most attractive, however, is the Californian *A. manzanita*, an evergreen; this will grow 6 to 8 feet, or even more, high and has very stiff, stout leaves 1½ to 2 inches long, nearly as wide, and of a glaucous green. The flowers, which open in March and April in short clusters, are deep pink, egg-shaped, ¼ inch long. A very handsome shrub flowering in March, which must have a sunny position and likes a peaty soil. It resents root disturbance and should always be planted out from pots.

ARCTOUS ALPINUS

At one time included in the genus *Arctostaphylos*, this low-growing deciduous member of the heath family is a native of the northern latitudes

of Europe, Asia and North America. It occurs wild in parts of Scotland and also on Skye, the Orkney and Shetland Islands. It is useful for a damp spot in the rock garden and is attractive in autumn when its leaves turn a brilliant red. The fruits are black. A lime-free soil of peaty nature suits it.

ARONIA (CHOKEBERRY)

Three species native of North America and closely related to *Sorbus* are in cultivation.

A. arbutifolia (red chokeberry), a shrub of bushy habit, grows from 4 to 10 feet high and has downy foliage and stems. It bears white flowers during late May followed by pear-shaped fruits that are bright red when ripe. Perhaps the most attractive feature is the brilliant red colouring of its foliage in autumn. *A. melanocarpa* (black chokeberry), also a bushy shrub some 4 to 5 feet high, produces sucker growths from the base and becomes somewhat flat-topped in habit. Its leaves are dark lustrous green and the fruits are black when ripe. *A. prunifolia* (purple chokeberry) is more or less intermediate between the two above-mentioned species and is sometimes offered in nurseries under the name of 'floribunda'. The distinct purple fruits are the main distinguishing feature. Propagation by seeds, cuttings or division.

ARTEMISIA

A well-known species from south Europe is *A. abrotanum*, the southernwood, or lad's love, a great favourite in cottage gardens for the fragrance of its finely divided, doubly or trebly pinnate leaves, the ultimate segments of which are almost thread-like. It is a bush usually 3 feet or so high, preferring a sunny spot and a light, well-drained soil. A taller Californian kind is called *A. tridentata* from the small silvery leaves being usually terminated by three teeth; this, too, is a fragrant bush, its odour too strong perhaps when the shoot is crushed, but pleasant as naturally emitted, especially after a shower. The flowers are insignificant.

ARUNDINARIA (BAMBOO)

To this genus belong some of the best hardy bamboos, such as *A. anceps*, *auricoma*, *fastuosa*, *nitida*, *murielae*, *ragamowskii*, and *simonii*. Of these the tallest is *fastuosa*, over 20 feet high, with erect stems 1½ inches wide at the base; this is, perhaps, the most imposing of hardy bamboos and is very

hardy. *A. simonii* approaches 20 feet in height, but is laxer and more graceful. Most graceful of all are *nitida* and the Chinese species *murielae*, the former with black stems, the latter with golden-yellow ones. *A. anceps* is also handsome, but apt to become a nuisance through spreading so rapidly by its underground stems. *A. ragamowskii* is notable as having the largest leaves of any hardy bamboo (sometimes 18 inches long by 3 to 4 inches wide, although itself dwarf and only 2 to 3 feet high). *A. auricoma*, only 1 foot or so taller, is the best variegated bamboo, its leaves striped with rich golden-yellow; in *A. fortunei* they are striped with white. Arundinarias, like other bamboos, love a deep, rich, moist, loamy soil and shelter from north and east. *A. nitida* and *murielae* like shade. All can be propagated by division, which is best done in May or September. (See also *Phyllostachys*.)

ASIMINA TRILOBA

The 'papaw' of the south-east United States is a robust shrub of rather gaunt habit, with large deciduous leaves up to 6 or 8 inches long. The flowers are solitary and open in June, each 2 inches wide and dull, lurid purple. The remarkable fruits, unfortunately rarely seen in this country, are bottle-shaped, 3 to 5 inches long, yellowish, filled when ripe with a sweet, edible pulp.

ASTRAGALUS (GOAT'S THORN)

A. tragacantha, a dwarf, very spiny shrub of the broom family, has small greyish pinnate leaves 1½ to 2 inches long. Flowers purplish-red, ¾ inch long, clustered a few together, and opening in May and June. The spines with which the older parts of the stems are thickly furnished are really the old, persisting, spine-tipped leafstalks with the leaflets fallen away. *A. massiliensis* is very similar, but has white flowers. Both are native of the Mediterranean region and require full sunshine and not too rich a soil.

ATRAPHAXIS BILLARDIERI

The handsomest species of a curious group of shrubs known as the goat-wheats. It is deciduous, up to 2 or 3 feet high, but of semi-prostrate growth. The tiny leaves are only ⅛ to ⅓ inch long; the flowers, ¼ inch wide and borne in June in clusters 1 inch wide, are of a glowing pink and last

a remarkable length of time in beauty. Native of the Levant, and needs a sunny spot.

ATRIPLEX HALIMUS (TREE PURSLANE)

The chief merit of this semi-evergreen shrub is the pleasant silvery-grey hue of the foliage. It grows about 6 feet high and is well adapted for positions near the sea. It rarely flowers, nor has it much beauty when it does. Native of south Europe. Common on some of the shores of Britain is *A. portulacoides*, the sea purslane. It is, however, only useful for seaside planting, being very suitable for exposed positions.

AUCUBA JAPONICA

The ordinary spotted aucuba with its bilious yellow tint is far too common in gardens, and it is the least attractive form of a very useful evergreen. Some really good dark green varieties are available, and when the two sexes are grown together the female gives a handsome display of bright red fruits each over ½ inch long and egg-shaped. The chief merit of the aucuba is its capability to thrive in very shady places, even under such trees as the horse-chestnut; in fact, it has no rival in this respect. Very easily propagated by cuttings or branched pieces 8 to 10 inches long. Where male and female plants are not growing close together, artificial pollination is desirable. In a favourable soil and situation, the aucuba will grow to a height of 8 feet.

AZARA

A. microphylla, a dainty evergreen Chilean shrub or small tree, with small, glittering dark green leaves ½ to ¾ inch long, and arranged in one plane like the segments of a fern frond. Its flowers are tiny and chiefly conspicuous for their numbers and their yellow stamens, but their most pleasing attribute is a charming vanilla-like fragrance. It blossoms from February to April, according to the season and locality. *A. lanceolata*, introduced from Chile in 1926, is also a large shrub or small tree of graceful shape. The flowers, which are produced during April, are soft yellow, small, but very abundant; they are pleasantly fragrant, but not so noticeable in that respect as *microphylla*.

BACCHARIS (TREE GROUNDSELS)

The tree groundsels are represented in gardens by two species: one, *halimifolia*, is deciduous and a native of North America; the other, *patagonica*, is evergreen and from the Magellan Straits region. Like the common groundsel, they belong to the composite or daisy family, and have dullish white flowers. Although easily grown, they have little interest for the amateur.

BAMBUSA (BAMBOO)

Most of the hardy bamboos belong to *Arundinaria* and *Phyllostachys* (*q.v.*). The only bambusa worthy of mention here is *quadrangularis*, a curious bamboo from China and Japan with square stems, sometimes made into walking-sticks. It needs rather warmer conditions than it gets near London, and is happiest near the south and west coasts.

BERBERIS (BARBERRY)

Exploration during the present century has increased by many the number of species of barberry available to the cultivator. The ordinary amateur can only hope to grow a small proportion of them, although an occasional enthusiast will specialize in the genus, and a very attractive study it makes. Here we can only find space to deal with the best of them. The flowers of barberries are all of some shade of yellow and are almost uniform in size, but the plants vary a good deal in habit, in size, shape of leaf, in being evergreen or deciduous, and in the red, black, or plum-coloured fruits. The flowers are usually ¼ to ½ inch wide, and the fruits as much long.

Evergreen Kinds. On the whole the most valuable evergreen barberry is *B. stenophylla*, a hybrid between *darwinii* and *empetrifolia*, raised in 1860 at the Handsworth Nurseries, Sheffield. It forms a dense thicket up to 10 feet high, out of which every year are thrust arching shoots 1 to 2 feet long, furnished with small, hard, spine-tipped leaves, and in April with a wealth of golden-yellow flowers. It is not far from being the best of all hardy evergreens, and makes a good hedge. *B. darwinii*, a Chilean species, is of stiffer habit, and has shining dark green leaves, about 1 inch long, profuse in its rich yellow bloom, and often laden with plum-coloured berries in autumn. Nearly related to it is another Chilean species,

B. linearifolia. This has flowers ¾ inch wide, rich orange internally, apricot-coloured outside. The leaves are narrow, being dark glossy green above, and blue-white beneath. It is one of the very best barberries. *B. candidula* and *B. verruculosa* are two low-growing evergreens from China of neat rounded habit, with lustrous dark green leaves, blue-white beneath. *B. gagnepainii* from China, and *B. hookeri* from the Himalaya, are shrubs a few feet high with erect, clustered stems branching near the top; both have shiny green leaves 2 to 3 inches long. *B. julianae* from Central China is a very hardy erect growing species; *B. sargentiana*, another species from China, has similar growth, but is taller.

Deciduous Kinds. Perhaps no deciduous barberry is more beautiful than our native *vulgaris*, either when furnished with its rows of pendulous flower racemes suspended beneath the branches in May, or later, when their place is taken by clusters of coral-like berries. But there are many other attractive ones, such as *B. aristata*, the most robust of them, a Himalayan shrub 10 feet high and 20 feet through, fruits blue-white; *B. buxifolia*, up to 10 feet high, but not so spreading, the earliest of the true barberries (not mahonias) to blossom in spring; *B. dictyophylla*, 6 feet high, distinct in its strong sucker growths being covered with a blue-white bloom; *B. jamesiana*, one of the best for scarlet fruits, which are freely produced in pendulous racemes; *B. prattii* and *B. polyantha*, *B. rubrostilla*, notable—the latter especially—for splendid crops of red berries; *B. thunbergii*, inferior as a flowering shrub, but the best of all for glowing autumn tints; its variety, *atropurpurea*, with purplish-red summer foliage is very attractive. The bark of the young shoots of *B. virescens* turns orange-red the first winter. *B. vernae* is one of the best newer species from western China whose flowers are small but copiously produced in dainty pendent racemes from the lower side of arching shoots. It grows 6 feet or more high, still more in width. Lastly, we have the *B. wilsonae* group from China, which, besides *wilsonae* itself, comprises *stapfiana*, *subcaulialata* and a number of hybrids or selected forms raised at Wisley, all semi- or wholly deciduous, 4 to 6 feet high, and producing enormous crops of coral-red fruits late in autumn. The deciduous barberries all like full sunshine, and neither they nor the evergreen ones are very fastidious as to soil. Seeds afford the easiest means of propagation, but *stenophylla* must be increased by cuttings made in July or August and put under a bell-glass. Many others may also be propagated from cuttings at this time.

BETULA (BIRCH)

The shrubby birches are *chinensis*, *humilis*, *nana*, and *pumila*, the most interesting of these to the amateur being *nana*, a neat shrub 2 to 4 feet high with round leaves ¼ to ½ inch wide, dark shining green and prettily crenulated at the margin. They are natives of Britain and useful for damp spots.

BRUCKENTHALIA SPICULIFOLIA

A dainty little evergreen resembling, and related to, the heaths and growing 6 to 9 inches high; the flowers are small rosy bells produced in June at the ends of the shoots. Native of east Europe and Asia Minor. A good rock garden shrub, and also useful for ground cover beneath other peat-loving shrubs.

BUDDLEIA

The best buddleias are the varieties of the Chinese *B. davidii* (*variabilis*), especially those known as *magnifica*, *veitchiana* and *wilsonii*, wide-spreading shrubs, which produce in late summer long terminal racemes of violet-purple to rosy-lilac, fragrant flowers beloved of butterflies, *nanhoensis*, a dwarf variety not usually growing to more than 4 feet high, and very useful for small gardens; other named varieties of more recent introduction are Empire Blue, Fascination, Peace, Purple Prince, and Royal Red. *B. globosa* from Chile, with balls of bright yellow blossom in June; *B. alternifolia*, distinct from all others in the alternate leaves and with bright lilac-purple flowers in June; and *B. colvilei* from the Himalaya, with much larger individual flowers varying in hue from rose to crimson, but not so hardy as the others. All like a rich loamy soil and are easily increased by cuttings. *B. davidii* and its varieties should be pruned well back in spring.

BUXUS (BOX)

The boxes are useful shrubs in the garden for forming evergreen backgrounds, giving shelter, or blocking out unsightly objects. In small gardens they are scarcely worth prominent places, but are useful for shady spots. All we need concern ourselves with here belong to the common species, *sempervirens*, which, as one sees it at Box Hill and elsewhere, is often a small tree. A pendulous variety is elegant, and a low one called

prostrata is useful where a low evergreen is wanted. *B. myosotifolia* and *myrtifolia* are graceful small-leaved forms, and *suffruticosa* is the common box hedging. For those who like variegated shrubs there are the varieties *argentea* and *aurea*. One advantage of the boxes is that they can by pruning be kept at a moderate size and in fancy shapes.

CAESALPINIA JAPONICA

A very thorny shrub from Japan, deciduous, and of wide, straggling habit, with doubly pinnate leaves and fine racemes 12 inches long, of rich yellow flowers each about 1½ inches wide. A handsome shrub of unusual character, belonging to the broom family; it is not very hardy, and must have some sunny corner sheltered from north and east, but fully exposed to the sun. Blossoms in June.

CALLICARPA

The callicarpas are grown for the beauty of their fruits, and *C. giraldiana* from China is perhaps the best and hardiest of them. It is a soft-wooded shrub, up to 5 or 6 feet high, with dull green opposite leaves 3 to 5 inches long and close clusters of small lilac flowers. The berries are ⅛ inch wide, globose, pale shining bluish-lilac. *C. japonica*, with pale pink flowers, followed by violet-coloured berries; *C. koreana*, with pale mauve berries and *C. mollis* with violet-purple berries are handsome in autumn and winter, the fruits being retained until well after Christmas.

CALLUNA VULGARIS (HEATHER)

This is the heather or ling which clothes so many of the moors and mountains in north Britain. A great number of selected varieties are grown in gardens, where they do best in poor peaty soil and give pleasant displays of colour from July onwards. Of white heathers alone there are half a dozen or more forms, of which *alba serlei* and *alba pilosa* are perhaps the best; *aurea* has yellow foliage; *alportii* has richly coloured crimson blossom; and there are several curious dwarfs such as *foxii*, *minima*, and *glauca*, suitable for the rock garden. There are many named varieties catalogued by nurserymen and of these H. E. Beale—double pink, is one of the best.

CALOPHACA WOLGARICA

A deciduous shrub 3 to 4 feet high, with pinnate leaves and pea-shaped yellow flowers in racemes 3 to 5 inches long, opening in June and July. A native of south-east Russia, near the River Volga, from which it takes its name. It does not succeed so well on its own roots as when grafted on stocks of laburnum. A sun-lover.

CALYCANTHUS (ALLSPICE)

Fragrant deciduous shrubs from North America, of which the two best are *floridus* from Carolina, distinct by reason of the soft, felted undersurface of its leaves, and *occidentalis* from California, a stronger grower up to 10 feet high, with leaves shining green beneath. These shrubs go by the name of allspice, from the spicy, aromatic principle that pervades the stems and leaves. The flowers are dark reddish-purple or maroon with numerous strap-shaped petals 1 to 1½ inches long, and appear in summer.

CAMELLIA

The well-known *C. japonica*, of which there are many varieties, has been very much neglected as a hardy shrub. Certainly it likes shelter and some degree of shade, but, given that, I have never seen it injured by cold. It has survived uninjured the most severe frosts at Kew. The glossy dark-green leaves make it a very handsome evergreen, even if it did not flower; but it does flower, and quite freely, although sometimes the blossom is apt to be injured by late frosts. In south-western gardens it is indispensable. It likes a moist peaty soil, but succeeds wherever rhododendrons do. *C. cuspidata*, a species from China, has single white flowers 1½ inches across; the leaves are lance-shaped, up to 3½ inches long and reddish when young; the habits slender and pyramidal and it is quite hardy. The cultivated type of *C. reticulata*, with soft red semi-double flowers 4 inches wide, can be grown in the more favoured localities, although the wild type is more hardy.

Numerous varietal forms of camellia are in cultivation, and in recent years nurserymen have given much attention to their culture. Today, quite a good selection of varieties may be found in most catalogues of repute that deal with flowering shrubs.

A few excellent varieties are: Adolphe Audusson, semi-double blood-

Chaenomeles japonica

Cornus nuttallii

Cotoneaster horizontalis

Cytisus kewensis

red; *chandleri elegans*, peony-flowered rosy-pink; Gloire de Nantes, semi-double clear rose; Jupiter, large single red, Lady Clare, semi-double soft pink; *magnoliaeflora*, semi-double shell pink; *mathotiana*, double rosy-red; *mathotiana alba*, double white and *mathotiana rubra*, double crimson. *C. saluenensis*, a beautiful soft-pink single-flowered species from Western China, is becoming very popular, being hardy in most districts. At Kew it has withstood severe frost with only slight injury to the foliage. By crossing this species with *C. japonica*, a number of beautiful hybrids have been raised and which are now known as *C.* × *williamsii*. *C. w.* var. Donation and *C. w.* var. Salutation are two of the best that were raised by the late Mr J. C. Williams of Caerhays. There is also *C. sasanqua*, another Chinese species that has been much grown and hybridized in Japan to produce many beautiful varieties. They are quite hardy in this country, but as the flowering period is during the winter, a sheltered position is necessary to protect the flowers from frost and cold winds.

CARAGANA

Shrubs belonging to the broom family, the best known of which is *C. arborescens* from Siberia, a tall shrub with pinnate leaves and yellow flowers opening in early May. A better one for small gardens is *C. aurantiaca*, which grows only 3 or 4 feet high and has orange-yellow blossoms strung very gracefully along the underside of the branches. They thrive in ordinary soil of moderate quality, are very hardy, and the abundant seed makes propagation easy.

CARIMCHAELIA FLAGELLIFORMIS

A curious New Zealand shrub of the broom family, 5 feet high, with green flattened twigs, scarcely any foliage, and an extraordinary profusion of tiny purplish-lilac pea-shaped flowers opening in June. It is quite hardy and worth growing for its interest. A warm sunny position and a well-drained loamy soil suit it best.

CARPENTERIA CALIFORNICA

An evergreen 5 to 6 feet or even more high, its lance-shaped leaves up to 4 inches long; its large, white, fragrant, single rose-like flowers 2 to 3 inches wide, borne after midsummer in clusters of three to seven, each one with a large cluster of yellow anthers in the centre. Near London it

needs shelter, the best place, perhaps, being a corner formed by the angle of two walls and open to the south-west. Generally it is not long-lived and for this reason young plants should be raised from seeds to provide a succession.

CARYOPTERIS

Of the species grown, *C. mastacanthus*, introduced from China in 1844, and *C. tangutica*, introduced from Kansu in 1915 by Farrer, are the best known. They belong to the verbena family, and the leaves are pleasantly scented. Both flower in autumn and are valuable for that, the blossoms being violet-blue, in clusters 1 to 1½ inches wide. *C. tangutica* is hardier than *mastacanthus*, which is best at the base of a wall or some such place. Both are dwarf-growing and easily increased by cuttings. Superior as a garden plant to either of the above species, is *C. clandonensis*, a hybrid of natural origin between *C. mongolica* and *C. mastacanthus* and introduced by Mr A. Simmonds of West Clandon, Surrey. Its flowers are a lovely bright blue and last over a lengthy period during September and October.

CASSINIA

Four New Zealand shrubs belonging to this genus are grown, most preferable of which is *C. fulvida*. Although of the daisy family, the foliage is rather heathlike, the tiny leaves being dark green above, yellow beneath. The young wood also is yellowish. The flowers come in July in terminal clusters 2 to 3 inches across, white, very small and numerous. Known also as *Diplopappus chrysophyllus*. About 4 feet high and increased by cuttings.

CASSIOPE TETRAGONA

A dainty little shrub of the heath family, growing only 6 or 8 inches high, with erect stems, closely pressed to which are the small, keeled, overlapping leaves, making them four-sided. The flowers are white, bell-shaped, ⅛ inch long, nodding, solitary in the leaf axils, and open in April and May. It likes cool moist conditions and a peaty soil, and succeeds best in the cool North. There are a number of other species in cultivation all being of interest but requiring rather specialized treatment.

CEANOTHUS

A North American group of evergreen or deciduous shrubs, many of them particularly valuable in gardens for their blue flowers, the rarest colour among hardy shrubs. Amongst these blue-flowered kinds are *coeruleus, cyaneus, dentatus, papillosus, rigidus, veitchianus,* and *thyrsiflorus,* every one of them worthy of culture, but all except *thyrsiflorus* needing the protection of a sunny wall in the colder localities. Towards the south coast and in S.W. districts they are magnificent, forming wide bushes up to 12 feet high. *C. thyrsiflorus* is quite hardy. The flowers of all ceanothuses are very small but densely packed in clusters, and in the kinds just mentioned they open from April to June. There is, however, a section of the genus composed of hybrids raised in France from *coeruleus, ovatus,* and *americanus,* which is very distinct and more or less deciduous, valuable also in being one of the showiest groups of shrubs flowering from July onwards. Most of these are hardy in the open ground. Gloire de Versailles, with bright blue flowers, is a particularly good one and will keep on flowering till the autumn frosts. Others to be recommended are: Indigo, the richest blue, but rather tender; Perle Rose, pink; *burkwoodii,* deep blue; Henri Desfosse, Topaz, A. J. Johnston, and Delight, all with bright blue flowers. The late-flowering hybrid section may have the old flowering shoots of the previous autumn shortened back in spring. All ceanothuses like a sunny position and are easily propagated by late summer cuttings.

CERATOSTIGMA WILLMOTTIANUM

A deciduous shrub up to 3 or 4 feet high which is valuable because it blossoms in late summer and autumn. The flowers are bright blue with purple anthers and come closely packed in terminal clusters, each flower ¾ inch wide. It was introduced from western China in 1908 and is quite hardy, although it may be cut to ground level by severe frost. But even if that happens, it springs up again freely and flowers as satisfactorily as ever.

CERCIS SILIQUASTRUM (JUDAS-TREE)

Perhaps the Judas-tree is more truly a tree than shrub, but in its young state it is really shrubby and flowers beautifully in May. No garden that can find room for it should be without it, for the purplish-red blossoms

clustering profusely on its branches, both old and young, have a special beauty of their own. It likes a good loamy soil and a place in the sun.

CHAENOMELES (CYDONIA)

Botanists now split the old genus of *Cydonia* into two, i.e. *Cydonia* proper which includes only the common quince (*Cydonia oblonga*), and *Chaenomeles* which includes the five species native of China and Japan. Of these, *C. lagenaria* is perhaps the best, providing a display before Christmas and for a month or so afterwards, depending on weather conditions. There are quite a number of varieties and colour forms, of which Knaphill Scarlet and Rowallane Seedling are excellent. *Cardinalis* (rich red), *nivalis* (white), and Aurora (rose flushed with yellow) are also good. *C. japonica* (syn. *maulei*) is a low-growing, spreading shrub, rarely more than 3 feet high. It bears scarlet to blood-red flowers quite 1½ inches wide. The fruits, which are also about 1½ inches across, are very fragrant and excellent for jelly or flavouring for apple tarts.

C. cathayensis, a much more open-growing shrub with spiny branches, is not so suited for general garden culture, although there are a number of American-raised hybrid varieties of it that have attractive pink and white flowers. The fruits are very large and heavy, often up to 6 inches long and 3 inches wide, and are closely set on the branches where they provide a curious and interesting feature. They ripen only during good seasons and are not so useful for culinary purposes as the fruits of *C. japonica*.

Propagation is by seeds, suckers or layered branches. Young plants should be grown in pots prior to planting out in the permanent positions.

CHAMAEDAPHNE CALYCULATA

Introduced from eastern North America in 1748, this small evergreen shrub was at one time included in the genus *Andromeda*. It is a pretty shrub when in flower during March and April. The flowers, although not large (about ¼ inch long) are white and are produced singly from the axils of the small leaves, forming leafy racemes. The variety *nana*, which only grows about 18 inches high, forms dense specimens that are useful for a position in the rock garden. Both the type and the variety may be propagated by cuttings or seeds and thrive best in moist, peaty soil. A soil containing lime is not suitable.

CHILIOTRICHUM ROSMARINIFOLIUM

A small evergreen shrub 2 to 3 feet in height and often 6 feet or more wide. It is a native of the Chilean Andes and is quite hardy. As the specific name denotes, it is a rosemary-like shrub with regard to foliage, but the flowers are like large daisies and measure 1½ to 2 inches wide. They are pure white with a yellow centre and freely produced. A member of the daisy family (*Compositae*), this shrub should be afforded a position in full sun.

CHIMONANTHUS FRAGRANS (WINTER SWEET)

Usually grown on a wall where its exceedingly fragrant flowers will open as early as December, this old-fashioned Chinese deciduous shrub is quite hardy in the open and often blossoms freely there, forming a bush 8 feet high and wide. The flowers are about 1 inch across, the outer petals yellow, the smaller inner ones purplish. The leaves are thin and harsh to the touch, and up to 5 inches long. There are two varietal forms, *grandiflorus* with flowers lemon yellow with chocolate centre, and *luteus* with sulphur-yellow flowers. Both are very fragrant.

CHIONANTHUS

A large deciduous shrub from the east United States, *C. virginica*, the fringe tree, is of great beauty in blossom. The flower panicles are pendulous, and a cluster of them is borne in June at the end of the previous year's growth. The individual flower is white, slightly fragrant, the petals ¾ to 1 inch long, but only $\frac{1}{12}$ inch wide, giving in the mass a fringe-like effect. Grown in rich soil in full sunshine, this shrub makes at the flowering season (June) an extraordinarily distinct and effective picture. Another species, *C. retusa*, is equally fine but difficult to obtain.

CHOISYA TERNATA (MEXICAN ORANGE FLOWER)

Although it comes from Mexico, this evergreen is hardy in most districts. It is a very leafy bush upwards of 6 feet high, with trifoliolate leaves and large clusters of white flowers each 1 inch wide, with a hawthorn-like scent. It is uncertain in its time of flowering, being occasionally in full bloom in midwinter, but April and May appear to be its natural time. It belongs to the orange family, and is readily propagated by cuttings of half-ripened wood.

CISTUS (ROCK ROSE)

For a dry sunny spot and for sites where the soil is on the poor side there is nothing that will succeed better than the rock roses. The genus is a large one, but many of the kinds are not hardy. Another thing which must be regarded as a defect is that the flowers only see the sun rise once, and usually the petals fall soon after midday. Still, for early risers or those to whom the garden is not a closed book during the first half of the day, the cistuses may be very attractive, for they bear an extraordinary profusion of beautiful flowers in a succession extending over several weeks. The following are the best and hardiest: *albidus*, usually 2 to 4 feet high, flowers 2½ inches wide, pale rosy-lilac; *corbariensis*, a neat, compact, very hardy bush up to 4 feet high, flowers 1½ inches wide, white; *cyprius*, the best of the larger kinds, 6 to 8 feet high, young stems clammy with fragrant gum, leaves long and narrow, flowers 3 inches wide, white, with a large blood-red patch at the base of each petal; *florentinus*, flowers white, 1½ to 2 inches wide; *laurifolius*, the hardiest of all cistuses, 6 to 8 feet high, of stiff habit, flowers white, 2 to 3 inches wide; *monspeliensis*, 2 to 4 feet high, leaves very narrow, flowers white, 1 inch wide; *purpureus*, a very beautiful hybrid, but only hardy enough to survive mild winters, flowers 3 inches wide, reddish-purple with a dark red blotch on each petal; *ladaniferus*, too tender for general cultivation, but much of its beauty has descended to its hybrid progeny, *purpureus*, *cyprius*, and *loretii*, the last a beautiful shrub 2 to 4 feet high, flowers 2½ inches wide, white, with a crimson blotch at the base of each petal, inherited from *ladaniferus*. *C. skanbergii* is a charming natural hybrid with pale pink blossom recently introduced from Greece.

All the cistuses are evergreen and flower in June and July; they are natives of south Europe, mostly in the Mediterranean region. They must have a well-drained position. The hybrids must be propagated by cuttings which take root readily.

CLERODENDRON TRICHOTOMUM

This species and *C. fargesii*, both from China, are closely related deciduous shrubs, or even small trees, with large leaves and large clusters of white fragrant flowers opening in August. The leaves emit an unpleasant odour if crushed. *C. fargesii* is, perhaps, the hardier, but it lacks the red calyx which adds to the beauty of the other. Both have bright blue fruits about

the size of a pea. They like a rich soil, a sunny place, and can be increased by root cuttings, or by seeds which should be sown as soon as ripe.

CLETHRA

Members of the heath family, thriving well in peaty soil or sandy loam devoid of lime. The hardy species are deciduous shrubs with pure white, spicily fragrant flowers opening in August on the leafy shoots of the current season, and produced in cylindrical racemes several inches long, on which they expand from the base upwards. Each flower is ½ to ¾ inch wide, with five petals united only at the bottom. The commonest kind is *C. alnifolia* from North America, but a better one is *C. tomentosa*. These can usually be increased by division, cuttings or seeds. Still more beautiful is *C. delavayi*, which flowers when quite small but may ultimately become a small tree. It is only hardy in the south and south-west.

COLLETIA

The most remarkable species in this genus is *C. cruciata*, a shrub with few or no leaves—and, when present, very small—but with large green flat triangular spines 1½ inches wide at the base, set in pairs on the branches, each pair at right-angles to the ones above and below it. These flat spines are really modified branchlets. The flowers are yellowish-white, ¼ inch long, tubular, and are very freely borne in autumn after a hot summer. It is hardy in the London area, but better in warmer counties. Another quite hardy species, *C. armata*, is well worth growing for its white flowers profusely borne as late as October. Both grow 6 to 8 feet high.

COLUTEA (BLADDER SENNA)

Shrubs of the broom family, the commonest and most easily grown being *C. arborescens* with yellow, pea-shaped flowers, and *C. media* with brownish-red ones, produced in racemes from June onwards, and followed by bladder-like pods which explode when squeezed. Both are very easily grown, up to 8 feet high, and are sometimes seen growing on railway cuttings near London. *C. orientalis*, with glaucous leaves and copper-coloured flowers, is a dwarfer shrub of greater distinction. All the species have pinnate leaves of seven to thirteen leaflets and come from south-east Europe and Asia Minor. Useful for dryish places and poor soils.

COMPTONIA ASPLENIFOLIA (SWEET FERN)

A deciduous shrub about 3 feet high, allied to our native sweet gale (*Myrica gale*), the slender branches clothed with narrow oblong leaves 3 inches long, deeply cut on both margins into broad oblong teeth. They have a pleasant odour like bay-leaves when crushed. Of no beauty in blossom, but very pretty in foliage. Likes a peaty moist soil. Native of North America.

CORNUS (CORNEL)

This is a large genus of shrubs and trees; of the shrubs but a small proportion are of interest to the amateur. Some, however, are of great beauty. In Britain the cornelian cherry, *C. mas*, sometimes a small tree, has been cultivated for centuries, and is valuable for bearing profuse crops of small yellow flowers on the naked shoots in February. To it belongs a handsome variety with leaves variegated in yellow and pink, called *aurea elegantissima*. *C. alba* and *C. stolonifera* are sometimes grown for the rich red winter bark, but they require more room than can often be spared. *C. alba sibirica* has equally bright red bark and is not so rampant a grower. *C. alba spaethii* is one of the very best of all yellow variegated shrubs. *C. paucinervis* from China is a pretty shrub 3 to 6 feet high bearing clusters 3 inches wide of small white flowers in July. *C. kousa* from Japan and China has inconspicuous flowers, but subtending them are four large, very ornamental, creamy-white bracts, 1 to 3 inches long and ½ to 1 inch wide. The Chinese form (*C. kousa* var. *chinensis*), a small tree easily grown in good soil and very hardy, is the best of the genus. Less easy to grow, but of the same character, are the North American *C. florida* and its variety *rubra*, the former with white, the latter with red bracts as large as those of *C. kousa*. *C. nuttallii*, a native of western North America, is a tree in a wild state, but in cultivation forms a large shrub. It is one of the finest of the cornels and at Kew flowers freely, with the bracts expanding in May. During the autumn the foliage turns a vivid red and is a wonderful feature.

COROKIA

C. cotoneaster, an attractive New Zealand shrub, is quite distinct from any other we can grow in the open. In colder districts it is best against a wall, but is hardy fully in the open further south and west. It is a rounded bush

up to 6 or 8 feet high, with thin wiry branchlets, very tortuous and much interlaced, furnished with small leaves less than 1 inch wide. The flowers are bright yellow, star-shaped, ½ inch wide, opening in May. *C. virgata* is another useful species, although not entirely hardy. It produces its starry yellow flowers freely, these often being followed by orange-yellow fruits.

CORONILLA

C. glauca is a very beautiful shrub whose glaucous, pinnate leaves and clusters of rich yellow flowers make a charming combination. But it is tender and needs a nook on the south side of a house if such can be found for it. In such a spot it makes a richly leafy bush up to 5 or 6 feet high. To the same genus belongs the scorpion senna, *C. emerus*, a hardier but less attractive kind.

CORYLOPSIS

Some pretty early-flowering shrubs belong to this genus, which is a member of the witch-hazel family, but the blossom is extremely liable to injury by frost in some districts. All the kinds have fragrant flowers of a soft primrose yellow, borne in pendulous racemes 1½ to 3 inches long. The most reliable kind is *C. spicata*, but *C. glabrescens*, *C. pauciflora*, *C. sinensis*, *C. veitchiana*, and *C. willmottiae* are also good. All are natives of China and Japan, are deciduous, and grow from 4 to 8 feet high. They may be propagated by means of seeds.

CORYLUS (COB-NUT, FILBERT, HAZEL)

The hazels are scarcely worth a place in the shrub garden; their place is the nut walk, where their catkins in early spring make a pleasant feature. But to those who want a specially vigorous, purple-leaved shrub, *C. maxima atropurpurea* may be recommended. A less vigorous one with yellow leaves is *C. avellana aurea*. A remarkable form with twigs twisted and curled corkscrew fashion is the variety *contorta*. All are easily grown and accommodating.

COTINUS (SMOKE PLANT)

These shrubs are often known as *Rhus* in gardens, but really belong to a separate family. *Cotinus coggygria* (*Rhus cotinus*) and *C. americanus* (*R. cotinoides*) are desirable shrubs. The first is European and grows up to

10 feet high, having round leaves and a curious inflorescence 6 to 9 inches long and wide, with many feathery ramifications that finally assume a smoky-grey colour; covered with these in late summer and autumn the shrub produces a remarkable effect. It is called the Venetian Sumach, or smoke plant. A purple-leaved variety (*purpureus*) is one of the best of that colour. *C. americanus*, similar in leaf but taller, is one of the best autumn colouring shrubs we have, the leaves turning orange and claret colour. A native of North America.

COTONEASTER

Up to the end of the nineteenth century most of the cotoneasters in cultivation had been introduced from north India, but since then a large number have come to us from China, and the kinds are now so numerous that only the largest gardens can hope to find places for the majority of them. The flowers are very uniform throughout the genus, being always white or nearly so and from ¼ to ⅓ inch wide. In leaf they are very variable, but the fruits are never larger than peas or haws and generally either red or black. The former, being the more ornamental, will be the only ones referred to here.

Evergreen Species with Red Fruits. *C. microphylla*, *thymæfolia*, and *buxifolia* form a group with small glossy green leaves, the first admirable for growing at the top of a sustaining wall, over which it will hang in a graceful mass. *C. conspicua decora* is not unlike *microphylla* and has scarlet berries. *C. franchetii* has slender arching branches with orange-scarlet fruits. *C. glabrata* is a strong-growing species, often 10 feet high, which produces its small red fruits in large clusters. *C. wardii* is rather stiff in habit and has bright orange-red obovoid fruits. *C. rotundifolia*, 6 feet high, has horizontal branches and oval fruits, bright red, and remaining on the bushes till March; *C. simonsii*, although only semi-evergreen, is also a handsome tall shrub. *C. salicifolia* and its variety *rugosa* are graceful free-fruiting kinds, and allied to them is *C. henryana*, a tall, elegant shrub brilliant in fruit; these three have strongly veined leaves 2 to 3 inches long. *C. congesta* is a dwarf dull-leaved one of very dense, compact habit; both are useful for the rock garden.

Deciduous Species with Red Fruits. The finest of all cotoneaster species is *C. frigida*; it is rather large for some gardens, as it grows 15 to 20 feet high, but its enormous crops of brilliant red fruits surpass in effect-

iveness all the others. A variety of it called *vicarii* raised in the Aldenham gardens has larger fruits. *C. bullata*, with wrinkled leaves, has also fine crops of similar fruits, and, like *C. divaricata*, is one of the best of the Chinese introductions. *C. horizontalis* is a flat-growing shrub with a fish-bone-like arrangement of its branches; the fruits are small but bright red, and the decaying leaves often give patches of colour; planted against a wall it will, without nailing, grow close to it up to a height of 10 or 12 feet. Smaller and equally prostrate is *C. adpressa*.

C. watereri is a very handsome hybrid between *frigida* and *henryana*, growing 15 to 20 feet high.

All the cotoneasters are easily grown and are not fastidious as to soil; they are also easily increased by July cuttings as well as by seed.

CRATAEGUS (HAWTHORN, MAY)

The hawthorns are nearly all trees, although not large ones, but there is one really shrubby kind called *C. monogyna* var. *semperflorens*. It is therefore a variety of the common hedgerow thorn, but so slowly does it grow that plants twenty years old will be only 3 feet high. It will continue flowering more or less from May to August.

CYDONIA OBLONGA (C. VULGARIS)

The common quince is more suited for orchard culture than for the garden, although it is quite handsome in spring with its pinkish-white blossoms, while its large golden-yellow fruits in autumn are very handsome. A tree in fruit is a very fine sight. The variety *maliformis* (apple-shaped quince) is also interesting, the rounded fruits being a rich golden yellow when ripe and quite distinct from the pear-shaped fruits of the type.

CYTISUS (BROOM)

A very ornamental group of European shrubs needing only moderately good soil and a sunny spot. *C. albus*, the white Spanish broom, is a tall and beautiful shrub, flowering in May; *C. purpureus*, a quite dwarf one with purple blossom, also flowers then. Except for some varieties and hybrids, the rest of these brooms have flowers of some shade of yellow. The common yellow broom of our moors and waste-places, *C. scoparius*, is a good shrub for a dry bank; its var. *andreanus* has the wing petals

brown-crimson; in var. *sulphureus* (Moonlight Broom) the flowers are pale sulphur-yellow. *C. purgans*, about 3 feet high, has hardly any leaves, but its green erect branches bear golden-yellow blossom in profusion; a hybrid between it and *albus* is called *C. praecox*, a wonderfully free-flowering shrub with sulphur-yellow blossoms in May rather heavily scented. *C. sessilifolius* flowers in June (bright yellow) and is of more bushy growth than is usual in this genus. *C. dallimorei* is a hybrid between *scoparius andreanus* and *albus*, flowers rosy-pink and crimson. *C. nigricans*, with terminal racemes up to 1 foot long, blooms in July. *C. battandieri*, more recently discovered and introduced from the Atlas Mountains, is a remarkable and beautiful broom. The three leaflets are 2 to 3 inches long, covered with silvery down, and the fragrant golden-yellow flowers in erect clusters 5 inches high. This is the largest of the genus, growing 10 to 15 feet high. The following hybrids are all good: *burkwoodii*, maroon red; Cornish Cream, cream and yellow; Donard Seedling, red, white and yellow; Dragonfly, crimson and yellow; Goldfinch, red and yellow; Johnson's Crimson; bright crimson, Lord Lambourne, crimson and yellow; Mayfly, yellow and buff.

Of dwarf species and hybrids, mention must be made of *C. ardoinii*, rich yellow; *beanii*, more robust and golden-yellow; *kewensis*, prostrate creamy-white; *versicolor*, yellow suffused with purple. All these are excellent as carpet shrubs or for the rock garden.

All the true species can best be propagated by seed, but the varieties and hybrids should be raised from cuttings, the stronger ones by grafting low down on seedlings of laburnum. All the freer-growing ones are improved in habit by 'stopping'—*i.e.*, cutting back—several times in the young state, thus getting them more bushy and less lanky. None of them transplant well and for this reason they are grown in pots in the young state. Once planted they should not be disturbed.

DABOECIA (ST DABEOC'S HEATH)

D. cantabrica is a valuable evergreen shrub of the heath family, wild in Connemara and south-west Europe. It is 2 feet high and has small, lustrous, dark green leaves and terminal racemes of flowers that continue to open from June to October; they are egg-shaped, rosy-purple, nearly ½ inch long. It likes a moist peaty soil or a light loam free from lime. There is a white-flowered variety (*alba*) and one with some flowers white, some

purple, and some particoloured (*bicolor*). Increased by seed or late summer cuttings. A comparatively new species, *D. azorica*, with deep red flowers has been introduced from the Azores.

DAPHNE

The commonest of the daphnes, *D. mezereum*, or mezereon, is a deciduous shrub 3 to 5 feet high, with erect, supple branches, producing very fragrant, purple-red flowers in early spring on the naked shoots. A very charming plant. Its var. *grandiflora* (*autumnalis*) flowers in October and November. Of evergreen kinds, *D. burkwoodii*, a hybrid between *D. caucasica* and *D. cneorum*, is excellent and produces its soft pink flowers in dense clusters towards the ends of the shoots. The flowers are very fragrant and open during May and June. *D. cneorum* is one of the most beautiful, a trailing shrub with small narrow leaves and dense clusters of rich rosy-pink flowers in May, admirable for the rock garden. *D. retusa*, sturdy and compact, grows 3 or 4 feet high, its flowers rosy-purple and fragrant, like lilac. *D. neapolitana* (*fioniana*) is 2 to 3 feet high, a shapely bush with rosy-purple flowers. Very fragrant and free flowering is *D. pontica*, yellowish-green; *D. laureola* (spurge laurel) is similar in colour, but not fragrant, or only fragrant at times; both are nice woodland shrubs. *D. blagayana* is low-growing and bears creamy-white, sweet-scented flowers in April; after flowering, the shoots should be pressed to the ground by placing stones on them, so that they can root afresh; this has proved to be the best method of cultivating a difficult plant. Daphnes as a whole are not easy to cultivate, and some of them seem to be naturally short-lived. Of the above, *mezereum*, *retusa* and *neapolitana* are the most satisfactory. All, or nearly all, grow naturally on limestone, and a loamy soil with mortar rubbish or lime added is most suitable for them.

DAPHNIPHYLLUM

Two species are grown, both handsome evergreens, but with no beauty of blossom. The better one is *D. humile* from north Japan, which makes a very compact, leafy shrub of hemispherical shape 3 to 4 feet high, leaves like those of a laurel in shape, but glaucous beneath. *D. macropodum*, also Japanese, is much more robust and 10 to 12 feet high. Both like shade and a loamy soil.

DECAISNEA FARGESII

This deciduous shrub from west China has stout, erect, very pithy shoots and large pinnate leaves, sometimes 2 feet or more long, and drooping panicles of yellowish-green flowers; but its most remarkable feature is the fruit, which is blue, cylindrical, 3 inches long, and curiously constricted. Although quite hardy, it needs a sheltered spot because the flowers are apt to be injured by late spring frosts. Somewhat of a curiosity.

DENDROMECON RIGIDUM

A shrubby poppy-wort from California, which near London must have wall protection; this it well deserves for the beauty of its brilliant yellow flowers, 2 to 3 inches wide. The foliage is glaucous and attractive. It will grow 12 feet high on a wall and blossoms for a long time in summer and autumn.

DESFONTAINEA SPINOSA

A beautiful evergreen 5 to 10 feet high, with spiny leaves like a holly, but arranged in pairs on the twigs. The flowers are narrowly funnel-shaped, 1½ inches long, crimson-scarlet, expanded at the mouth into five rounded yellow lobes. Unfortunately the shrub is not very hardy, and near London needs to be grown only in a warm, sheltered position. Native of Chile and Peru, and most successfully cultivated on our western and southern seaboards, where it produces seed in plenty. The flowering period extends from July to September and later.

DESMODIUM TILAEFOLIUM

A semi-woody plant in most districts, this member of the pea family is useful for the shrubbery on account of its late flowering character. It sends up annually from a woody root-stock erect stems 3 to 5 feet high which terminate in large panicles of pinkish-mauve pea-like flowers which open during August and September. The stems require to be pruned hard back to almost the base during early spring, but as they naturally die back during the winter, this pruning is inevitable. It is a native of the Himalaya and in addition to the flowers, the trifoliate leaves are handsome and give the whole shrub a distinct appearance.

DEUTZIA

A large number of deutzias, members of the saxifrage family, much augmented by hybridization, are now offered by nurserymen. They are all deciduous bushes and vary from 3 to 10 feet high, with oblong or lance-shaped, finely toothed leaves 2 to 4 inches long; flowers ½ to 1 inch wide, borne in clusters, and always white, pink, or purplish-rose. The best known hardy species is *D. scabra* (*crenata*) with pretty panicles of blossom 3 to 6 inches long, pure white, tinged with pink outside. Other good species are *purpurascens*, *discolor*, and *longifolia*, all with flowers ¾ to 1 inch wide suffused with rose, *vilmorinae* and *wilsonii*, both with flowers white and 1 inch wide. Good hybrids are *lemoinei*, *kalmiaeflora*, *magnifica*, *macrocephala*, and *venusta*. The deutzias like a rich loamy soil and are easily increased by July cuttings. In low-lying sites they are liable to have their flowers and young growths injured by late frosts.

DIERVILLA (WEIGELA)

Robust deciduous shrubs of spreading habit belonging to the honeysuckle family, of which some half a dozen species and numerous garden varieties are grown, mostly 4 to 8 feet high. The most desirable come from China and Japan and have funnel-shaped or bell-shaped flowers 1 to 1½ inches long, spreading at the top into five lobes, and produced on short leafy twigs from the shoots made the previous year, which are often 1 to 2 feet long. No shrubs better repay good cultivation. They like a deep moist loam and an annual or biennial top dressing of manure. As the aim should be to get long leafy growths, it helps if old, exhausted, or weakly branches are cut out after flowering. Easily increased by cuttings.

D. japonica, *grandiflora*, and *florida* have rosy-coloured flowers, the last of which, perhaps, is the best. All flower in late May and June. There are a number of varieties of *florida*, two of which *looymansiiaurea* and *variegata* are attractive with their yellow variegated foliage. A good white variety of *florida* is called *candida*, and another good one is Abel Carrière; quite distinct in colour is *D. floribunda*, the flowers being dark, almost blood-red; two very attractive varieties from this species are Eva Rathke and *lowei*, with crimson flowers.

An American group, distinct in bearing their flowers at the end of the current season's growth in July and August, are not so ornamental, the best, perhaps, being one called *splendens*.

Newer hybrid varieties are Newport Red and Bristol Ruby.

DIOSTEA JUNCEA

A curious and not unattractive shrub from Chile and the Argentine, of tall, lanky habit suggestive of *Spartium junceum* but belonging to the verbena family. The leaves are in pairs, narrow, and only ¾ inch long; the flowers tubular, ⅓ inch long, pale lilac, borne in clusters at the end of short twigs in June. The best place for this plant is in a shrubbery, the ordinary denizens of which it will overtop, whilst its naked base will be hidden. Propagation is by cuttings in July and August.

DIPELTA

Three Chinese species, *ventricosa*, *floribunda* and *yunnanensis*, are in cultivation, deciduous bushes ip to 8 feet high, allied to diervilla and abelia and with the same funnel-shaped flowers 1 to 1¼ inches long, fragrant, pale rose, with orange or yellow in the throat. Their distinctive feature is a number of bracts at the base of the ovary, thin discs which grow as the fruit forms and ripens. *D. floribunda* is quite a handsome shrub and the best of the three for general cultivation. Loamy soil and a sunny spot suits them, but is not essential.

DIRCA PALUSTRIS (LEATHERWOOD)

A deciduous shrub 3 to 6 feet high, closely related to daphne. It is not in any way a showy plant, but invites attention because it flowers in March. The blossoms appear, usually three together, at the joints of the naked twigs and are pale yellow with protruding stamens. The shoots are extraordinarily supple. A native of eastern North America.

DISANTHUS CERCIDIFOLIA

This is chiefly of value for its brilliant autumn colouring, the leaves (which resemble those of the Judas-tree in shape and size) turning a fine claret-red suffused with orange. The flowers are not pretty, being very dark purple; two of them are set back to back, each ½ inch wide, with five narrow petals. It belongs to the witch-hazel family, is 6 feet or so high, and comes from Japan.

DISCARIA SERRATIFOLIA

A Chilean shrub 10 feet or more high, deciduous, with small leaves ½ to 1 inch long and branches armed with stiff spines of about the same length.

It is worth growing for its great abundance of small white tubular flowers, which are pleasantly fragrant and open in June. Closely related to *Colletia*, and under which name it was at one time known.

DISTYLIUM RACEMOSUM

This evergreen shrub from Japan is perhaps more curious than beautiful so far as the flowers are concerned. They are borne in small erect racemes, 1 to 2 inches long from the axils of the leathery dark green leaves. Each flower consists of a red downy calyx with purple stamens. There are no petals. This shrub is perfectly hardy and is useful for a position in sun or shade, the flowers being produced during April and May. It may be propagated from half-ripened cuttings taken in July and inserted in sandy soil in a warm propagating frame.

DRIMYS

Two species are grown in the warmer parts of the British Isles, one from Tasmania being *D. aromatica*, an evergreen shrub up to 15 feet high, the leaves 2 or 3 inches long, dark green, their stalks as well as the young shoots red; flowers white. The other is *D. winteri* (winter's bark), and it grows up to 30 feet high with numerous white flowers each 1¼ inches wide, borne in loose umbels. They belong to the magnolia family, and the bark has its characteristic aromatic fragrance. The former is the more tender, but both have been grown successfully when given the protection of a south or south-west wall.

ELAEAGNUS (OLEASTER)

Evergreen and deciduous shrubs characterized by the scaly covering of the leaves and young shoots. Of the evergreen species, two are worth growing, both of robust growth. *E. macrophylla* has large, very dark green, shining, oval leaves up to 4½ inches long and silvery underneath, and fragrant silvery blossoms ½ inch long, like tiny fuchsias in shape, opening in October and November. *E. pungens* has oblong leaves 2 to 4 inches long, whitish but thickly set with brown scales underneath, but it is better known by its variegated forms, of which the best is *aureo-variegata* with golden-yellow markings in the centre of the leaves; var. *aurea* has rich yellow margins, and var. *fredericii* is variegated with creamy-white.

Of the deciduous species, *E. argentea*, the silver berry of North America, is 6 to 10 feet high, with oval leaves 2 inches long, silvery on both sides; its flowers open in May and are silvery outside, yellow inside—a very distinct shrub that suckers freely. *E. multiflora* is chiefly noteworthy for the large crops of berries, each ½ inch long, oblong, deep orange, with an agreeable flavour but very acid. *E. umbellata* is too large to be suitable for a small garden, becoming ultimately 20 to 30 feet in diameter and half as much high; it is, nevertheless, a handsome and free-flowering shrub, the leaves silvery beneath, the flowers silvery outside, creamy-white within; fruit globose, red. The two last, as well as the evergreen kinds mentioned above, are from Japan. None of the *Elaeagnus* are fastidious as to soil, but like a sunny spot, and will withstand hard pruning when required.

ELSHOLTZIA STAUNTONII

This is another semi-woody plant that is valuable on account of its late-flowering habit. The heads of purplish-pink flowers are produced at the ends of woody stems 3 to 5 feet high during September and October. It belongs to the mint family (*Labiatae*) and the leaves when crushed emit an odour like mint. It is readily propagated by cuttings or seeds and to obtain strong flowering growths each year, hard pruning almost to the base of the previous year's wood is necessary. It is a native of China, and to ensure the best results, a rich soil is necessary and a sunny position.

EMPETRUM (CROWBERRY)

E. nigrum is a heath-like, low evergreen, from the high latitudes of the northern hemisphere, including the moors and mountains of north and north-west Britain. It has no beauty of flower but grows easily and makes a close ground cover 1 foot or even less high. The fruit is an orange-shaped black berry scarcely ¼ inch wide. *E. rubrum* is of similar growth, but it is native of the antarctic regions of South America and has red fruits.

ENKIANTHUS

Some very attractive shrubs, chiefly Chinese and Japanese, are included in this genus, which belongs to the heath family and is deciduous. They have pretty, pendulous flowers, either bell-shaped or pitcher-shaped, never more than ½ inch long, usually less, and a very characteristic hori-

zontal mode of branching, the twigs being usually in whorls and the leaves clustered at the end of the shoots. *E. campanulatus* from Japan, which succeeds with us better than any, has creamy-yellow flowers veined with red; in *cernuus* they are white, the corolla toothed; in *cernuus rubens* rich red; in *deflexus* yellowish-red with deeper coloured lines; in *perulatus* and *subsessilis* white. But whilst in habit and in blossom the various species are attractive, their greatest charm, perhaps, is in the rich soft hues of autumn, red in all those mentioned except *perulatus*, which occasionally turns yellow. In our average climate they are mostly 4 to 8 feet high, but considerably taller in the south-west. They like peaty soil or a light loam free from lime. Easily raised from seeds, or cuttings may be rooted.

EPHEDRA (SHRUBBY HORSE-TAIL)

The singular shrubs known by this name have crowded rush-like stems, slender and pithy, with few or no true leaves, and usually form low masses of greenery 1½ to 3 feet high, of rather elegant and certainly unusual aspect. The fruits are sometimes freely borne after a hot summer and are handsome, being globose, ¼ inch wide, and red. *E. gerardiana* from the Himalaya, and *E. nebrodensis* from south-east Europe, are sometimes seen in gardens, but generally regarded more as curiosities than as ornaments.

ERICA (HEATH)

The various hardy heaths are now very popular, and a heath garden, or area devoted almost solely to them, is a feature in many large establishments. The leaves of all heaths are very much alike, being ⅛ to ⅓ inch long and about as thick as a needle; and so are the flowers, which vary in shape only from globular to cylindrical and in length from $\frac{1}{12}$ to ⅓ inch, but in colour they range from white to rich rose, red, and purple. In stature and habit there is considerable diversity, from the low species like *cinerea* and *carnea* to the tall ones like *E. arborea* and *E. lusitanica*. They thrive best in a peaty or light sandy soil, and must be in full sunshine. Propagation is effected by seed or, more commonly, by cuttings put under a bell-glass in August. The following, all of European origin, may be recommended.

Spring Flowering. *E. arborea*, not one of the hardiest, but growing 10 feet high near London, twice as high in milder localities, flowers white, very fragrant, opening in March and April; *arborea alpina*, of

denser, more erect growth, 10 feet high, flowers duller white, very hardy; *australis*, rather more tender than *arborea* and killed in very hard winters, flowers rich rosy-red; a variety of *australis* known as Mr Robert, discovered by the late Lieutenant Robert Williams of Caerhays, has pure white flowers; *carnea*, dwarf and dense in habit, flowers deep rose, there is a white variety (*alba*); *darleyensis*, a hybrid very like *carnea*, but more vigorous, a valuable heath; *lusitanica*, up to 10 feet, flowers white, a very beautiful species naturalized in Dorset; *mediterranea*, up to 10 feet, flowers like those of *carnea*; *veitchii*, a hybrid between *arborea* and *lusitanica*, and very like the latter, but more bushy.

Summer and Autumn Flowering. *E. cinerea*, the grey heath of Britain, 6 to 12 inches high, flowers bright purple, white in var. *alba*, almost pure red in var. *coccinea*; *ciliaris*, also dwarf, rosy-red; *stricta*, 8 feet high, pale rose; *tetralix* (cross-leaved heath), rose coloured; *vagans* (Cornish heath), pink-purple in long erect racemes, var. *alba* is white, var. *kevernensis*, discovered near St Keverne by Mr P. D. Williams, has more bell-shaped flowers of rosy-pink. Numerous garden varieties of the spring and autumn-flowering ericas are to be found in nurserymen's catalogues.

ERINACEA PUNGENS (HEDGEHOG BROOM)

A very spiny shrub rarely more than 1 foot high in this country, the spines being really sharp-pointed, almost leafless twigs. The flowers are purplish-blue, an unusual colour among brooms. Suitable for a sunny spot in the rock garden. A native of Spain.

ESCALLONIA

A genus of South American hardy or half hardy shrubs, mostly evergreen. One species, *E. virgata*, is deciduous and perfectly hardy; it has small leaves ½ to ¾ inch long, small but abundant white flowers in June and July, and will grow 6 to 8 feet high. *E. iveyi* is a hybrid raised at Caerhays, with very dark, almost black-green, shining leaves and large panicles of white flowers. A handsome, shapely evergreen. A very popular kind in the west country and on the south coast is *macrantha*, a glossy-leaved evergreen with bright rosy-red flowers, which makes a most admirable hedge in those parts; near London it needs a sheltered position. *E. rubra* and *punctata* are killed to the ground in severe winters only; and even then

Daphne burkwoodii

Deutzia scabra plena

Enkianthus campanulatus

Erica darleyensis

break up again in spring; both have red flowers. A hardy hybrid with rose-tinted white flowers is *exoniensis*; a still better one with rosy-red flowers is *E. langleyensis*. Very good, too, are the Donard group of hybrids, such as Donard Brilliance, crimson; Donard Seedling, pale pink; and Donard Gem, pink. Apple Blossom, a hybrid of recent introduction is excellent, it has large rose-pink flowers. *E. pterocladon*, *floribunda*, and *revoluta* are all evergreen and have white blossom, but need wall culture except in the south and west. All the escallonias can be increased by cuttings in late summer.

EUCRYPHIA

E. glutinosa, a semi-evergreen shrub from Chile, is one of the most beautiful of our larger summer-flowering shrubs, producing its white flowers with attractive stamens and golden anthers during July and August with great freedom. Although quite hardy, this beautiful shrub, which will ultimately grow to a height of 15 feet, is not easy to propagate or transplant, this no doubt being the reason why it is not common. It is best increased by seed, and the young plants when raised should be grown in pots and plunged out-of-doors until they are finally planted in the permanent position, which should be sheltered from the north and east in the colder districts. Two other species of evergreen habit are also grown, *E. cordifolia* from Chile and *E. lucida* from Tasmania, but they are not so hardy for the average garden. *E. nymansay*, a natural hybrid between *E. glutinosa* and *E. cordifolia*, has become popular and has proved a useful subject for a woodland position. It is of upright habit and produces its large pure white blossoms during August. This hybrid eucryphia may be propagated from cuttings inserted in a heated frame during late summer, but the growth should not be too ripe, otherwise the cuttings will be slow to root. Layering is also possible.

EUONYMUS (SPINDLE-TREE)

Except the evergreen species like *japonicas* and *radicans*, the spindle-trees are grown almost exclusively for the beauty of their fruit; but one species, *E. alatas*, is one of the richest coloured of all shrubs in autumn, its leaves dying off in rosy-scarlet. No species, perhaps, is really handsomer than our native *europaeus*, whose fruits are red, its seeds orange-coloured. These are the colours of most of the fruits of euonyums, but the seeds,

of course, are only seen in the later stages of ripening when the capsules burst but still retain them. *E. latifolius* has larger leaves than *europaeus* (3 to 5 inches long, and half as wide), and larger, longer stalked, pendulous fruits, very handsome. *E. radicans* is a creeping evergreen, useful as a ground cover in shady places; there are several variegated forms of it, a very good one called Silver Queen; a tiny-leaved variety is called *kewensis*, a dainty creeping plant. The common evergreen *E. japonicus* is a valuable seaside shrub with glossy dark green leaves, but is quite hardy in most localities; it has numerous forms variegated in yellow and red, some of the more vividly coloured ones, however, are inclined to be tender. The flowers of spindle-trees have little beauty, being mostly greenish. Cuttings of the evergreen kinds root very readily; the others are best from seeds.

EURYA JAPONICA

An evergreen related to the camellias, but possessing none of their beauty of flower, the blossoms being small and inconspicuous. Its leaves are glossy green, 1½ to 3 inches long, and the habit neat and dwarf, but that is about all that can be said for it. A native of China and Japan.

EXOCHORDA

Very handsome deciduous flowering shrubs closely allied to the spiraeas, with which they were once united. The flowers, however, are considerably larger than any found in the true spiraeas, being 1 to 2 inches wide, pure white; they are borne on erect racemes in April and May. The best-known species is *E. racemosa* from China, a bushy shrub up to 10 feet high; another very similar one is *E. korolkowi* (*albertii*) from Turkestan; a hybrid between the two is *E. macrantha*. *E. giraldi* and its variety *wilsonii*, both from China are also good. They enjoy a rich loamy soil, and a sunny position.

FABIANA

F. imbricata, although it belongs to the solanum family, in growth and leaf is more suggestive of a huge heath, the branchlets being clothed with tiny leaves. The flower is a slender white tube ¾ inch long. In colder districts this shrub needs shelter, but in the south-west and other favourable parts, it will grow 8 feet high and as much in diameter. When in full blos-

som in late May or June it is an object of wonderful beauty. No garden in the milder counties can afford to be without it. *F. violacea* is a new shrub closely related to *imbricata* but much more spreading in growth and probably hardier; the flowers vary from pale mauve to blue and are very charming.

FATSHEDERA LIZEI

A bigeneric hybrid between *Fatsia japonica moseri* and the Irish ivy, *Hedera hibernica*, raised in France. From the ivy it has inherited a loose sprawling habit and from the fatsia its large, lobed leaves. It is likely to be useful in shady places and dark corners and especially for town gardens.

FATSIA JAPONICA

A large evergreen shrub of striking appearance growing 6 to 8 feet high near London, but twice as tall in the south-west. Except that it does not like an exposed wind-swept place, it is hardy. The leaves (very nearly, if not quite, the largest among hardy evergreens) are 12 to 16 inches wide, deeply lobed, dark shining green. Flowers milky-white, opening in late autumn on large panicles made up of globose heads 2 to 3 inches wide. It will succeed in semi-shade. A native of Japan introduced in 1838.

FORSYTHIA

This genus includes the most beautiful of all shrubs with early yellow blossom. About five species are grown, the best of which are *suspensa* and *viridissima*, both from China. The former has slender stems and a rambling habit and flowers on the naked wood in March or early April. *F. viridissima* is a sturdier plant and blooms two weeks later. There is a hybrid between the two called *intermedia*, which is quite equal to them in beauty; it has a graceful habit and grows 10 feet high. From its seeds several distinct forms have been raised, the best of which (indeed, the best of all forsythias) is var. *spectabilis*, the flowers being deeper yellow and more abundant. The flowers of all forsythias are very similar, having a short tube expanding into four lobes and measuring about 1¼ inches in diamater. Leaves 3 to 5 inches long. Two species of more recent introduction are *giraldiana* from China and *ovata* from Korea. Both flower early in March and should be included in any collection.

These shrubs are all very hardy, bear pruning well, and grow well in

good loam and fully exposed to the sun. They are increased very readily by late summer cuttings. The genus is indispensable to any garden.

FOTHERGILLA

Deciduous shrubs from North America related to the witch hazels and very similar to them in leaf. The flowers are of a very unusual type, being made up chiefly of white stamens that form a globose or cylindrical cluster 1 to 2 inches long. *F. gardenii* has long been grown, but one superior and more robust is *F. major*, which grows 8 feet high. Another is *F. monticola*, the leaves of which, like those of *gardenii*, turn red in autumn; those of *major* change to orange-yellow. They like a moist open loam, or peat and loam mixed.

FREMONTIA CALIFORNICA

If a sheltered corner can be spared, no more beautiful or interesting shrub than this can be found to fill it. It is really a small tree in California, but is rarely more than 8 or 10 feet high as grown here. It produces a wealth of golden-yellow flowers, each 2 to 2½ inches wide, in June and July. Unfortunately it is often comparatively short-lived and apt to die suddenly without any apparent reason. It enjoys full sunshine and should be grown in a pot till finally planted out. A comparatively new species, *F. mexicana*, is very similar in leaf and flower (the latter of a more orange shade) but is more tender. Seeds, which are usually very freely produced, provide an easy means of increase.

FUCHSIA

Essentially shrubs for the south and south-west counties and maritime districts, where they grow into small trees, some fuchsias may still be grown in our average climate if one does not mind their being cut back to the ground in winter. They grow again in spring and make shoots a yard or more high that flower freely from July onwards. The following may be recommended: *macrostemma*, *riccartonii*, *gracilis*, *globosa*, *corollina*, and a charming dwarf one, *pumila*. All these have red and purple flowers much smaller than we are accustomed to see in greenhouses, although a number of hybrid varieties with larger flowers are now catalogued by nurserymen and reputed to be hardy.

GARRYA ELLIPTICA

This Californian species is the only one worth cultivation. It is evergreen, grows 8 to 12 feet high, and has roundish oval leaves 1½ to 3 inches long; its flowers are densely borne on perfectly pendulous greyish catkins 4 to 10 inches long that open from November to February. They have no colour beauty to recommend them, but are extremely graceful. The shrub is hardy and likes a sunny place.

GAULTHERIA

A large genus of evergreens belonging to the heath family, not many of which are really hardy. The commonest is *G. shallon*, an American species, which forms a dense thicket of stems and leaves up to 6 feet high, bearing pinkish-white pitcher-shaped flowers in racemes up to 4 inches long in May, each blossom ⅜ inch long. It loves a shady damp place and a soil free from lime. The juicy dark red fruits are platable. *G. procumbens* is the creeping wintergreen of the Americans, a low, creeping plant only a few inches high, with small shining green leaves, pinkish-white flowers, and white or reddish fruits. It makes a pretty evergreen carpet in a rather shaded spot. *G. veitchiana*, *G. sinensis* and *G. forrestii* are Chinese kinds of low growth and with blue fruits.

GAULTHETTYA WISLEYENSIS

Also known as *Gaulnettya*, this bigeneric hybrid originated at the Royal Horticultural Society's Garden at Wisley. It is a hybrid between *Gaultheria shallon* and *Pernettya mucronata*, and it is of special interest as a hybrid uniting a shrub from the northern hemisphere with one from the southern hemisphere.

This evergreen bushy shrub grows about 3 feet high and has a spreading habit. It is ideal for the rockery and also for the front of a mixed shrubbery, where it will grow well in either sun or shade. The foliage is dark green, leathery and each leaf is roundish; forming an excellent foil to the pearl-white lily-of-the-valley-like blossoms. These measure about ¼ inch long and are freely produced in racemes at the ends of the shoots. Attractive purple-black fruits follow the flowers, so that it is a shrub that is good both in flower and fruit. Propagation by cuttings during late summer presents no difficulty when inserted in sandy peat under a bell-glass in gentle heat, or in a close frame.

GAYLUSSACIA

The huckleberries of North America belong to this genus and are evergreen or deciduous shrubs related to the vacciniums and needing similar conditions. Some five kinds are grown, the prettiest of which is *G. dumosa*, a low shrub with pure waxy-white, bell-shaped flowers ⅓ inch long and black globose fruits. *G. resinosa* and *G. frondosa* produce the most palatable fruits, but they are rarely ripened in any quantity with us.

GENISTA (BROOM)

Some very beautiful flowering shrubs, all European or north African, are included in this genus. They are closely related to our native broom and have similarly shaped flowers. Propagation is best effected by seeds, which are usually obtainable, but if not, late summer cuttings under a bell-glass may be used. A light sandy soil is best for them, and they must have a sunny spot.

G. aetnensis is a tall, rather lanky shrub up to 15 or 20 feet high, with practically no foliage, but green, slender, rush-like twigs; flowers golden-yellow, profusely borne in July. If not grown in a group, it should be given a place at the back of the shrubbery. *G. cinerea* and *virgata* are also tall shrubs with small grey-green leaves and yellow flowers in June and July, both very beautiful. *G. hispanica* (Spanish gorse) is a dwarf spiny shrub not often over 3 feet high, of compact habit, covered in late May or June with a wonderful profusion of the richest yellow flowers; it does not like a rich soil or a damp or shady spot, and is best planted on a mound. Another low shrub of dense growth is *G. pilosa*, only 1½ feet high, but covered with yellow flowers in May. *G. sagittalis* is only a few inches high and has curious winged stems and erect racemes of yellow blossom. *G. tinctoria* is a low native shrub known as dyer's greenweed, the best form of which for gardens is var. *plena*, with double flowers. *G. lydia* from eastern Europe and introduced in 1926, is a semi-prostrate shrub ideal for the rock garden and provides a remarkable feature when covered with its bright yellow blossoms during May and June.

GREVILLEA

Being Australian, the grevilleas are not hardy as a rule, but *G. rosmarinifolia* will grow near London and southwards in a sheltered corner or against a wall. It is 4 to 6 feet high, and resembles a rosemary in leaf and

has rosy-red flowers ¾ inch long in terminal racemes. *G. alpina*, a dwarfer species, and *G. sulphurea*, with yellow flowers, are of about similar hardiness.

GRISELINIA LITTORALIS

In mild or maritime localities this New Zealand evergreen is a favourite shrub on account of its free growth and pale, shining green leaves, which are about 3 inches long and 2 inches wide. It sometimes grows up to 20 feet high but has no beauty in flower.

HALESIA (SNOWDROP-TREE)

H. carolina is really a tree and even in England is occasionally 20 to 30 feet high. Still, it is more often a shrub, and so beautiful that it cannot be omitted from this enumeration. In a small state it has a spreading habit and produces its pure white snowdrop-like flowers hanging in rows beneath the branches. It is deciduous and blooms in May. Two other species, *H. diptera*, and *H. monticola*, are in cultivation, but they do not flower so freely. They are native of the south-east United States.

HALIMIUM

Closely related to the helianthemums, and in which genus they were at one time included, the halimiums are useful shrubs for dry sunny positions and for hot sandy soils. There are about seven species in cultivation, and of these *H. lasianthum* is perhaps the best for general garden culture. It is a somewhat spreading shrub growing up to 3 feet high and is an evergreen. During May the attractive rich yellow flowers, rendered more conspicuous by a purple blotch near the base of each petal, appear in succession on short twigs. It is perfectly hardy and comes through the most severe winter without damage. *H. alyssoides*, *H. halimifolium*, *H. ocymoides* and *H. umbellatum* are other useful species. They all have yellow flowers except *H. umbellatum*, which has white flowers stained with yellow. Propagation by seeds or cuttings is quite easy, but to obtain the best results, the plants should be grown in pots prior to planting out in the permanent quarters. All are natives of Spain and Portugal and the Mediterranean region.

HAMAMELIS (WITCH-HAZEL)

These deciduous shrubs, two American and two from China and Japan,

are now great favourites, especially the Asiatic ones. With leaves like a hazel, they have curious yellow flowers, the chief parts of which are four strap-shaped petals about ½ inch long. *H. mollis*, rich yellow, flowers about New Year's Day and is very fragrant; it is distinguished by its large, softly downy leaves; its var. *pallida* has sulphur-coloured flowers. *H. japonica* flowers in February and has bright yellow, crumpled petals; its var. *arborea* has deeper yellow flowers with a claret-coloured calyx; in the var. *zuccariniana* they are lemon-yellow. Of the two American species, *H. virginiana* flowers in September, *H. vernalis* in spring; the latter is about the least worthy of the witch-hazels, but *virginiana* is often very pretty. *H. mollis*, *japonica*, *arborea*, and *japonica zuccariniana* are the best and give brightness and fragrance in the open air when little else is in bloom, braving even snow and frost. Usually seen as shrubs, they are all capable of becoming small trees with age. They like a loamy soil, no shade, and are usually propagated by grafting on *H. virginiana*.

HEDERA HELIX (IVY)

Ordinary ivy, being a climber, has no place as such in this enumeration. Yet in one state it is truly shrubby. When the ivy reaches the top of its support it usually ceases to produce the slender shoots with aerial roots attached, and develops instead a bushy mass of branches which represent the adult or flowering and fruiting condition of the plant. Cuttings taken from this part of the plant take root readily and retain their character permanently, forming handsome hemispherical bushes up to 6 or 8 feet high, dense and leafy, flowering and bearing fruit freely. All the species and varieties of ivy, when once they have attained this state, may be treated as ordinary evergreen shrubs. The fruits are black and as large as peas.

HEDYSARUM MULTIJUGUM

A Mongolian deciduous shrub of the broom family, spreading in habit, and 2 to 3 feet high. Its pinnate leaves, 4 to 6 inches long, are made up of over twenty leaflets. The flowers, which come in a succession of erect racemes from the leaf axils, are pea-shaped, rosy-magenta, ¾ inch long. The magenta shade is not very pleasing to some people, but the flowers continue to appear from June to September, and it is a useful shrub for a sunny dry position.

Escallonia
'Donard Seedling'

Eucryphia glutinosa

Forsythia intermedia spectabilis

Garrya elliptica

Hibiscus syriacus totus albus

HELIANTHEMUM (SUN ROSE)

For the cultivation of these shrubs reference can be made to *Cistus* on a previous page. To that genus the sun roses are closely allied. The best-known kinds are *H. chamaecistus*, a quite dwarf British plant with yellow flowers, and the numerous varieties raised from it with variously, often highly coloured blossoms which range in colour from white to rose, scarlet, and crimson. They are useful for dry, sunny places on banks, on sustaining walls, or the rock garden. *H. apenninum*, *H. canum* and *H. glaucum* are other useful species. As in cistus, the flowers fall the same day they open.

HIBISCUS SYRIACUS

Although in cold wet seasons its flowers come too late to show their best, there are, for the south of England at any rate, few better late-flowering shrubs than this. It is a bush up to 10 feet high, with lobed leaves, and flowers 3 to 4 inches wide of the trumpet-mouthed shape so common in the mallow family to which it belongs. The varieties are very numerous, and the colours range from white to red, blue, purple, and striped; some are double flowered, and there is one with variegated leaves. *Hamabo*, *coeleste*, *elegantissima*, Woodbridge, and *totus albus* are good varieties. A sunny place is absolutely essential for these shrubs.

HIPPOPHAE RHAMNOIDES (SEA BUCKTHORN)

With its silvery-grey leaves and large crops of orange-coloured berries persisting the winter through, this shrub or small tree is always worth growing if room can be found. But it is unisexual, and plants of both sexes are necessary; one male can be planted with five or six females in a group. Very hardy and a good seaside shrub.

HOHERIA (PLAGIANTHUS) LYALLII

A deciduous shrub from New Zealand of great beauty, blooming in July. It has jaggedly toothed leaves, bright green and 2 to 4 inches long, from the axils of which the flowers come in clusters of two to five, each 1½ inches wide, pure white. Two forms are cultivated, viz., the type which has more downy leaves, more cup-shaped flowers with thicker petals, and a sturdier growth, and var. *glabrata* with smooth leaves and thinner and more transparent petals.

In exceptionally hard winters it may be cut back, but ordinarily it is quite hardy. Given a good loamy soil it will grow 10 feet high or more. Propagation by half-ripened cuttings during July or early August although not exactly easy, is possible in a warm propagating frame. Seeds when procurable germinate freely but there may be variation in the plants that result.

HYDRANGEA

By the addition of a good number of new kinds from China this has now become a rather large genus, but only a few need be grown. *H. petiolaris* is really a climber, but makes a charming low bush if planted against an upturned tree-stump or a rocky mound, producing large flat clusters of white flowers in June. *H. paniculata* has pyramidal panicles of blossom, very handsome in August and September. There are nearly always two kinds of flowers in each truss in this genus—small ones which are fertile; and large, usually four-petalled ones which are sterile. In *H. paniculata grandiflora* all the flowers are of the latter kind, as they are also in *H. arborescens grandiflora*, where, however, the large flower trusses are mop-like instead of pyramidal. The common hydrangea is *hortensis* (*macrophylla*), hardy enough for a sheltered place out of doors in many localities, and very valuable in the south and south-western counties. Its huge flower trusses are usually pink, but blue in some soils. *H. villosa*, a Chinese species, is very beautiful and produces during July and August many heads of its blue and lavender shaded flowers. It requires a sheltered position. All the hydrangeas like a good loamy soil and can be increased readily by cuttings in late summer. They are 4 to 8 feet high.

HYMENANTHERA CRASSIFOLIA

A semi-evergreen shrub 3 to 6 feet high, with small leaves ½ to 1 inch long and small flowers of no beauty, but producing large crops of white, globose fruits tinged with blue on the sunny side and about the size of a pea. A native of New Zealand and remarkable botanically as belonging to the violet family.

HYPERICUM

A large genus of shrubs and herbaceous plants with yellow flowers, some of them very ornamental. The common *H. calycinum* from the Orient is a

low evergreen with a creeping rootstock and solitary flowers 3 inches wide; very useful for carpeting semi-shaded spots. *H. patulum* var. *forrestii* is Chinese and is, perhaps, the handsomest of all hypericums, growing 3 feet or more high and bearing great crops of golden-yellow flowers from July onwards. *H. hookerianum*, which resembles it, is from the Himalaya and also good. *H. moserianum*, a hybrid, is very free flowering and handsome. Other good kinds are *frondosum* (*aureum*), *androsaemum*, *elatum* and *leschenaultii*. The hypericums are happy in sun or slight shade and like a loamy soil. Easily increased by cuttings.

IBERIS (CANDYTUFT)

Most of the members of this genus are herbaceous, but a few are shrubby, the best being: *I. gibraltarica*, an evergreen species from Spain, with white flowers, shaded lilac, produced in large flat clusters which grows from 12 to 18 inches high; *I. semperflorens*, an evergreen, 1 to 2 feet high, of bushy shape, with fragrant white or pink-tinged flowers crowded in flattish clusters 1 to 2 inches wide; and *I. sempervirens*, only half as high, more spreading, with narrower leaves and white flowers. The first two species, being more tender, are suitable for the south coast and more favoured places, and flower from October to April; the third is quite hardy and flowers from April to June.

ILEX (HOLLY)

Many hollies, both evergreens and deciduous, have been introduced from abroad, but none approaches our native one, *Ilex aquifolium*, in beauty or usefulness. It is a moot point whether it or the yew makes the best of all evergreen hedges in the open country, but in smoky districts the holly is undoubtedly superior. Scores of varieties have been raised from it, differing very much in size and shape of leaf, in habit, and in the gold or silver variegation of the leaves.

Large-Leaved Green Kinds. Of these I consider *camelliaefolia*, with its large, often spineless, black-green leaves, the best; but *wilsonii*, *fisheri*, *hodginsii*, *mundyi*, *nigricans*, and *altaclarensis* are all excellent and very vigorous.

Small-Leaved Green Kinds. As a rule these are dwarfer and much less vigorous than the preceding; *myrtifolia*, *recurva*, and *ovata* may be grown.

Golden Variegated. *I. aureo-marginata, aureo mediopicta* (Golden Milkmaid), *aurea regina* (Golden Queen), *watereriana* (compact and almost spineless).

Silver Variegated. *I. argentea marginata, argentea medio-picta* (Silver Milkmaid), *argentea regina* (Silver Queen), Handsworth new silver.

There are also weeping varieties, *pendula* and *argentea pendula* (Perry's Weeping); the curious hedgehog holly, called *ferox*; and *fructu luteo* with yellow berries.

Ilex cornuta is a handsome Chinese species of close, rounded habit, up to 8 or 10 feet high, with curiously reflexed spiny leaves. *I. crenata* from Japan is a dwarf, small-leaved species, and its var. *mariesii* is the smallest and densest of hollies, with leaves only ¼ inch wide. *I. opaca* is the American holly, dull leaved, and far inferior to ours.

Of the deciduous hollies, which were once kept generically distinct as *Prinos*, the best are *I. verticillata*, producing fine crops of bright red or yellow berries, and its Japanese counterpart, *I. serrata*, with similar fruits.

Evergreen hollies should be transplanted just as evidences of new growth appear—i.e., in early May; or in late September.

ILLICIUM

Illicium anisatum (*religiosum*) from China and *I. floridanum* from the United States are two evergreen shrubs, usually 2 to 4 feet high, related to magnolia and with the same aromatically scented bark. The Chinese species is the hardier and has pale greenish-yellow flowers; in the other they are maroon-purple. In both the petals are very numerous (up to thirty), strap-shaped, and ½ to 1 inch long. Both are rather tender.

INDIGOFERA

A genus belonging to the broom family and notable as containing the indigo plant. The best kinds for gardens are *I. decora*, a low shrub with pinnate leaves and erect racemes of white-and-pink flowers, and *I. gerardiana*, a Himalayan shrub usually cut back to the ground in winter, but sending up new shoots in spring 2 to 4 feet high, clothed with pinnate leaves and producing successively from July onwards racemes of very pretty rosy-purple blossom. Other handsome kinds are *kirilowii*, *potaninii* and *pendula*, the latter with perfectly pendulous slender racemes 12 to 18 inches long.

Holboellia latifolia glabrata

Hydrangea petiolaris

Kalmia latifolia

ITEA

I. virginica, a deciduous shrub, 3 or 4 feet high, has erect, clustered stems bearing erect, cylindrical racemes 3 to 6 inches long of fragrant white flowers in July and August. It is an old plant in gardens, having been introduced from Virginia in 1744, but is now rarely seen. It needs generous treatment at the root and occasionally breaking up and replanting to get the best out of it.

I. ilicifolia is evergreen and less hardy; it has holly-like leaves, flowers greenish-white in slender pendulous racemes up to 12 inches long. A native of China.

JAMESIA AMERICANA

A deciduous bush of rounded habit, 4 to 6 feet high, the leaves 2 to 3 inches long, two-thirds as wide, toothed, very downy beneath; flowers white in terminal panicles about 2 inches long and wide, opening in May. Native of western North America. Of no outstanding merit, except that it withstands hot, dry conditions, and is, therefore, a useful shrub for dry positions.

JASMINUM (JASMINE)

Whilst most of the hardy jasmines are not climbers in the strict sense of the word, but shrubs of loose rambling habit, *J. nudiflorum*, the beautiful yellow-flowered species that blossoms from November to February, is most satisfactory if it can be nailed loosely to a wall and its slender shoots allowed to hang freely. *J. beesianum* is a Chinese species bearing rose to carmine flowers, followed by shining black berries that are retained until mid-winter. *J. officinale*, the common jasmine with white fragrant flowers, is a climber, and is also best on a wall. *J. fruticans* and *J. revolutum* can be kept strictly as shrubs, and have yellow flowers. *J. parkeri* is a comparatively new species from north-west India, a charming minute jasmine only 6 to 12 inches high of close rounded habit. The leaves, made up of three or five leaflets, are only 1 inch long, and the yellow flowers are solitary. Admirable for the rock garden. *J. stephanense*, a hybrid between *J. beesianum* and *J. officinale*, and of French origin, is a vigorous climber with fragrant pale pink flowers. The jasmines like a loamy soil and are easily increased by cuttings. Young plants should be grown in pots, until planted in the permanent position, otherwise they transplant poorly.

KALMIA

Three evergreen species of this genus are commonly grown. The finest is *K. latifolia*, a shrub up to 6 feet or more high, with rhododendron-like leaves 3 to 5 inches long and flattish trusses 3 inches wide of beautiful saucer-shaped flowers each about 1 inch across, varying in tint from white to deep rose. *K. polifolia* is only about 2 feet high and has small narrow leaves, white beneath, and flattish clusters 1½ inches across of beautiful pale purplish-rose flowers each ½ inch in diameter. *K. angustifolia* is 2 to 4 feet high and has deep rosy-red flowers, not so attractive as those of the previous species, but still pretty. In habit this is the neatest of the three, all of which are natives of the eastern side of North America. They like the same treatment as heaths, to whose family they belong.

KERRIA JAPONICA

A Chinese deciduous shrub 4 feet or more high, with solitary yellow flowers borne at the end of short side twigs in April, each about 1½ inches wide. A double-flowered variety, *plena*, is better known, a more robust shrub twice as high, each blossom 1½ to 2 inches wide, consisting of a rounded mass of bright yellow petals. Whilst the type is bushy, twiggy, and compact, this is tall and but little branched. Propagation by division is an easy matter.

KOLKWITZIA AMABILIS

This is one of Wilson's introductions from China, a relative of the abelias, 6 to 8 feet high, with flowers bell-shaped at the base, but with five spreading lobes; pink except for some yellow in the throat. Very pretty when flowering freely, but often shy-blooming. May and June.

LAURUS NOBILIS (BAY LAUREL)

In mild localities this aromatic evergreen will in time become a tree 60 feet high, but we know it chiefly as a shrub. It bears pruning so well that it can be kept at any reasonable size. It is hardy in all but the colder districts, and is a most useful evergreen for shelter and as a background. The pointed leaves are 3 to 4 inches long, nearly half as wide. The greenish flowers open in May and June but have little beauty.

LAVANDULA (LAVENDER)

Two kinds of lavender are hardy with us—the true, *L. vera*, which is the

one grown as a crop to yield the finest lavender oil, and *L. spica*, which yields 'oil of spike'. The latter is commonest in gardens and is the well-known shrub whose flower fragrance is not far from being the most delightful of all odours. Both come from the Mediterranean region, and no garden, however small, can afford to be without one of them. There is a dwarf variety and a white-flowered one. The lavenders like the sun, a well-drained soil, and are propagated readily by cuttings. They flower in July and August.

LEDUM

Evergreen dwarf shrubs of the heath family, best known in gardens by *L. groenlandicum*, a very hardy and pretty species, 2 to 3 feet high, with scented narrow leaves up to 2 inches long, clothed with brown wool beneath, and terminal rounded clusters, 2 inches wide, of white flowers. *L. palustre* is not so good and has narrower leaves. They are natives of high northern latitudes in both hemispheres and must have a cool, moist soil free from lime. Increased by seeds or cuttings.

LEIOPHYLLUM BUXIFOLIUM (SAND MYRTLE)

A charming little evergreen related to the ledums, of neat close habit and about 1 foot high, the leaves ¼ to ½ inch long, half as wide, glossy green; the flowers are white, ¼ inch wide, in clusters 1 inch across. Native of North America. Blossoms in June. May be propagated during July, by cuttings of half-ripened shoots inserted in sandy peat and placed in a propagating frame.

LEPTOSPERMUM SCOPARIUM

An Australian and New Zealand evergreen shrub only really at home in the milder counties, but capable of being grown against a wall near London. It has small leaves ½ inch or less long, and white flowers ½ inch wide. Var. *nichollsii* has carmine-red flowers; var. *chapmanii* has them larger than ordinary, and rose coloured. In south Devon and Cornwall they are 15 to 20 feet high.

LEUCOTHOE

L. catesbaei is a North American evergreen, usually 3 to 4 feet high, with narrow, long-pointed, leathery leaves 3 to 5 inches long. It blossoms

in May, its small, white, pitcher-shaped flowers being borne in long rows of short racemes beneath the branches. *L. davisiae* an evergreen species and *L. racemosa*, a deciduous species both with clusters of erect racemes, 3 to 4 inches long, of white flowers, are also worth growing. They need a peaty soil or a light loam without lime. They belong to the heath family.

LEYCESTERIA FORMOSA

A deciduous shrub from the Himalaya, 4 to 6 feet high, with soft pithy stems and leaves up to 6 inches long. It blooms from June to September, near, or at, the end of the current season's shoots. The flowers are funnel-shaped, purplish, and borne in spikes 2 to 4 inches long. The most conspicuous feature of the inflorescence, however, is the large claret-coloured bracts. It bears fruit like small gooseberries in shape, ½ inch long and reddish-purple. Pheasants are very fond of them, and the shrub, thriving in shade, has been planted as covert.

LIGUSTRUM (PRIVET)

There is no room in the garden for the common privet, *L. vulgare*. For making hedges it is much surpassed by its Japanese counterpart, *L. ovalifolium*, which makes an excellent hedge, somewhat greedy at the root, but almost evergreen except in very hard winters. The variegated form of it, *aureum*, is the most popular, perhaps, of all variegated shrubs. Four other privets, all Chinese, may be recommended as flowering shrubs: *L. lucidum*, the best of the evergreen species, growing 15 feet or more high, with large lustrous leaves up to 6 inches long and broad panicles of white flowers 6 to 8 inches high, opening in August and September; *L. sinense*, ultimately a big bush up to 15 feet high, the best of the deciduous privets for its flowers, which are borne very profusely in July; *L. ionandrum*, an evergreen of dense habit up to 8 feet high, with small bright green leaves producing in autumn enormous crops of round black berries ¼ inch wide. Best suited for the south and west. Finally, there is *L. quihoui*, the latest of the privets, and flowering in September and October. All these are easily increased by summer or autumn cuttings, and although they enjoy a good loamy soil a poorer one will satisfy them.

LINDERA (SPICE BUSH)

The linderas are aromatic shrubs allied to the bay laurel. Two species

are worthy of notice here and prove interesting subjects for the mixed shrubbery where variety is required. *L. benzoin*, a spicily aromatic shrub of deciduous character, is a native of the eastern United States. It bears greenish-yellow flowers in clusters during April and these are followed by red fruits in autumn. *L. praecox*, a native of Japan and Korea, is interesting on account of its early flowering habit, the small greenish-yellow blossoms densely clustered along the naked branches begin to open at the end of February. To get this shrub to flower freely, a warm sunny spot where the wood will become thoroughly ripened, is necessary. It is for this reason that it is often given a position on a south wall, where a well developed specimen will flower with great freedom. Cuttings during late summer, or seeds when produced, serve as means of increase. The former should be inserted in sandy soil in a warm frame.

LINNAEA BOREALIS (TWIN FLOWER)

This dainty little creeping shrub, a few inches high, named after the great Linnaeus, has roundish leaves not more than ¾ inch long, and pink or white flowers borne in a pair at the top of a thread-like stalk 2 or 3 inches high. In a shady moist spot it will make a dense carpet over the ground. Found in the high latitudes of the northern hemisphere, including a few places in the north-east of Britain.

LINUM ARBOREUM (TREE FLAX)

A low evergreen shrub with narrow glaucous leaves up to 2 inches long and very bright yellow flowers 1½ inches wide, appearing in July. It is a gay little shrub if grown in some sheltered spot exposed to full sunshine. Increased by cuttings. The individual flower lasts but one day. A native of the eastern Mediterranean region.

LIPPIA CITRIODORA (LEMON-SCENTED VERBENA)

Although hardy enough in the south and west, this charming lemon-scented shrub needs a wall near London. Its pale green narrow leaves, 3 or 4 inches long, are borne usually in threes, occasionally in pairs or fours, at each joint. In August it bears numerous tiny purple blossoms in panicles 3 to 5 inches high. Native of Chile. Easily propagated by cuttings.

LITHOSPERMUM DIFFUSUM (PROSTRATUM)

Although only sub-shrubby, this plant is of such great beauty that it must be included here. It is prostrate, evergreen, growing only 6 inches

or a little more above the ground, its leaves linear, ½ to ¾ inch long, its flowers of a beautiful gentian blue and about ½ inch long. It does not need a rich soil, but likes a sunny spot. Admirable for the rock garden. A native of south Europe. Readily propagated by cuttings in summer; the young plants should be kept in pots during the first winter.

LONICERA (HONEYSUCKLE)

This is a large genus spread over the temperate parts of the northern hemisphere, and comprising between 150 and 200 species, a very large proportion of which are of no interest here. It is composed of two sections —climbing species and bushy ones; of the former the best known are *L. periclymenum* and *L. caprifolium*, both deciduous and natives of Britain, but *L. italica*, *L. japonica* (evergreen), and *L. tellmanniana* are also admirable.

Of bushy kinds, *fragrantissima* and *standishii*, also *purpusii* a hybrid between them, are appreciated because they flower during mild periods through the winter and have very fragrant blossom. Another useful one is *tatrica*, especially its var. *latifolia* with rosy-red flowers (the type is white or pinkish), a vigorous bush flowering in late May and June. *L. hispida* has funnel-shaped yellow flowers 1 inch long, whilst those of *L. pyrenaica*, a charming small shrub, are of the same shape and pinkish-white. Where there is plenty of room and a good loam, *maackii* may be grown, a wide spreading shrub with often horizontal branches, on the upper side of which is borne an abundant crop of flowers, at first pure white, then yellow. *L. ledebourii*, a strong growing species from California, produces its large orange-yellow flowers, tinged red, in pairs from the axils of the leaves during June. It thrives well in seaside districts. Two very fragrant kinds, of graceful spreading habit, are *syringantha* and *thibetica*, with narrow oblong leaves and lilac-coloured flowers. All those so far mentioned are deciduous. A distinct evergreen one with glittering dark green leaves, scarcely ½ inch long, purple-blue berries, and a densely bushy habit, is *L. nitida*; it succeeds well near the sea and is much used for forming dwarf hedges. All these bush honeysuckles produce their flowers in pairs. They all like good loamy soil and are easily increased by cuttings.

LUPINUS ARBOREUS (TREE LUPIN)

This very handsome lupin requires plenty of room, for it will get to be

6 feet or more high in a few years. It has the typical lupin leaf, made up of usually nine narrow leaflets arranged digitately and the typical erect raceme 6 to 10 inches long, consisting of numerous flowers, sulphur yellow in the type, but also blue, purplish, lilac, in the fine variety Snow Queen white. It flowers in June and July, and perhaps because of its profuse flowering is sometimes short-lived. Only sufficient seed for propagation should be allowed to ripen. It is a native of California.

LYCIUM CHINENSE (BOX THORN)

A valuable seaside shrub and useful also for inland localities in sunny, rather dry places. It has a spreading loose habit, small purple flowers, and—its most attractive feature—large crops of scarlet- or orange-coloured egg-shaped fruits nearly 1 inch long. It is a favourite wall shrub on cottages south of London.

LYONIA LIGUSTRINA

This is not one of the best of the heath family, but as it flowers as late as July and August it may be grown. It is deciduous, 3 feet or more high; leaves 1½ to 2½ inches long, half as wide; flowers globose, dullish white, produced in panicles 3 to 6 inches long. It is one of the numerous shrubs that have been called 'andromeda'. A native of east United States.

MAGNOLIA

The cultivated species of this wonderful group came from east North America, China, India, and Japan. The individual flowers are the largest borne by any hard trees or shrubs, unless the cultivated forms of the moutan or tree-peony are allowed to compete with them. All bear their blossoms singly at the end of the shoot, some on leafy shoots of the current season, some on the naked ones of the previous season. Many have scented flowers, and all have more or less aromatic bark. Some of those mentioned here are really trees, but are included because they flower when quite small and still in the shrubby state.

The first to blossom is *M. stellata*, whose many petalled white blossoms usually commence to open in March and constitute one of the chief joys of the spring garden; although often injured by frost, successive batches of flowers appear. Closely related to it, but with six-petalled flowers, are *M. kobus* and *M. salicifolia*, the latter with willow-like leaves and a slender

Lombardy poplar-like habit. Next in point of time comes the yulan, *M. denudata*, a small tree when old enough, but producing when quite small its pure white, larger, and more substantial blossoms. Before the yulan has finished, the first flowers of *soulangeana* begin to appear, the commonest and best known of all magnolias. It is a hybrid between *denudata* and *obovata*, and from the latter inherits a greater or less degree of purple colouring on the outside of the petals. Many forms have been raised from its seed, some of which are almost pure white, like vars. *superba* and *spectabilis*, others, like vars. *nigra* and *lennei*, wholly deep rose-purple outside the petals.

Turning to those which bloom later on the leafy shoots, we have *M. sieboldii* (*parviflora*), *M. sinensis*, and *M. wilsonii*, with beautiful cup-shaped, pure white flowers whose beauty is enhanced by a ring of crimson stamens in the centre. *M. watsonii* has larger ivory-white flowers 5 to 6 inches across, with similarly coloured stamens.

The latest deciduous kinds to flower are *M. virginiana* and *M. thompsonianna*, both of which have leaves glaucous beneath and richly fragrant, creamy-white flowers from July to September.

The evergreen *M. grandiflora* blooms as a shrub, but is naturally a large tree. Its fine oval, glossy dark green leaves, 6 to 10 inches long, and its huge scented flowers, 8 to 10 inches wide, appearing in late summer and autumn, give it a unique place among hardy evergreens. It will eventually make a small tree in the open near London, but needs a wall in the north.

Magnolias like a warm, deep, well-drained loamy soil, or a peaty one. They should be transplanted in September or early May.

MAHONIA

Closely related to *Berberis* and at one time included in the genus, the mahonias are distinct in having simple pinnate foliage, and the absence of spines on the branches. The best known of the mahonias is *aquifolium*, the Oregon grape, an almost indispensable shrub in all gardens. It will grow up to 6 feet high, but may be kept down to an even 2 feet by periodical cutting down, to form a low ground covering that is especially useful for positions amongst trees and other semi-shaded spots. The handsome glossy foliage often assumes a purplish tinge in winter, whilst the dense inflorescences of inch yellow flowers that usually begin to appear during February, are very attractive. Closely related to it and a native of

the same country—the Pacific side of North America—is *M. pinnata*, but it has dull green leaves and grows more than twice as high. The flowers have a pleasing fragrance.

A very popular and striking group of mahonias is formed by *M. japonica* and its variety *bealei*. They have leaves ordinarily 1 to 1½ feet long, sometimes 2 feet in mild localities, the leaflets varying in number from seven to thirteen, very leathery, spiny-toothed, dark green. In habit the plants are stiffly erect, with stout, sparingly branched stems up to 10 feet high. The flowers are lemon-yellow, very fragrant and borne in a cluster of slender racemes 6 to 9 inches long. The variety *bealei* is of great vigour, the leaflets larger and with fewer spines, the bases of the leaflets often overlapping. By reason of their early flowering habit and delightful fragrance, *M. japonica* and its variety *bealei* are a real acquisition to any garden.

MALUS (CRAB)

Most of the species and hybrids are trees, but there are several that are shrubby in habit and do not reach large proportions. *M. florentina*, a charming species with pure white flowers produced during June, should be more generally known. It has distinct hawthorn-like leaves and produces yellowish-red fruits in the autumn. *M. purpurea* is of hybrid origin and one of the most beautiful of the flowering crabs, the flowers being purplish-red and literally covering the whole bush during April. It is often grown as a standard tree by nurserymen. *M. sargentii*, a shrub up to 8 feet high, produces its pure white flowers in clusters of five or six and is very attractive in autumn with its orange-shaped, bright red fruits. *M. sieboldii*, the Toringo crab, is also interesting, although it does reach a height of 10 to 15 feet under good cultivation, it is more often a low growing shrub. The flowers are pale pink to deep rose, very freely produced and followed in autumn by small fruits about the size of a pea. These are brownish red to yellow and quite smooth, and often hang on the branches late into the winter months.

MELIOSMA

M. cuneifolia and *M. pendens* are two deciduous shrubs introduced by Wilson from China. They have handsome ribbed leaves and panicles of small yellowish-white flowers, whose chief attraction is a pleasant hawthorn-like fragrance. Ultimately they are upwards of 10 feet high.

MENZIESIA PILOSA

M. pilosa is of the heath family, 3 feet or so high, with narrowly oval leaves 1 to 2 inches long and bell shaped, creamy white flowers ¼ inch long in May. Native of North America. Much more beautiful, but still rather rare, is *M. purpurea* with red, bell-shaped flowers, each ½ inch long, borne in clusters of about six. *M. ciliicalyx*, with yellowish green and purple bell-shaped flowers, is also a pretty dwarf shrub. Both are natives of Japan.

MOLTKIA PETRAEA

Belonging to the borage family, and found wild in Dalmatia, this is a charming little shrub 1½ feet high with lavender-like leaves and violet-blue flowers crowded in clusters at the end of the young shoots in June. It is not very robust and likes a sunny ledge on the rock garden or some similar spot. Increased by cuttings.

MYRICA (BAYBERRY)

The handsomest of the bayberries or gales is *M. californica*, an evergreen up to 10 feet high, with narrow leaves 2 to 4 inches long, regularly and angularly toothed. It is not so hardy, however, as our native sweet gale (*M. gale*) plentiful on moors in the north, a peat-loving deciduous bush about 3 feet high, with pleasantly fragrant leaves. For them alone it is worth growing, the flowers having no beauty.

MYRICARIA GERMANICA

Related to the tamarisks and similar to them in habit, the plume-like branches of this deciduous shrub bear racemes of pink flowers, 4 to 8 inches long in summer. The leaves are tiny, like those of tamarisk, and their glaucous grey hue gives the tone to the whole shrub. Increased easily by winter cuttings, but of no great merit.

MYRSINE AFRICANA

A neat evergreen 1 to 3 feet high, forming a rather dainty, very leafy bush, unisexual. The leaves, set closely together on the twigs, are ¼ to ¾ inch long, scarcely as wide, deep lustrous green. The pale brown flowers are of no beauty, but the berries of the female plant are rather pretty, being blue or violet-blue, orange shaped, ⅙ inch wide. Native of China, the Himalaya, the Azores, and South Africa.

MYRTUS COMMUNIS (MYRTLE)

The common myrtle is a shrub that needs some protection, and even then suffers in very hard winters; still, it bears good crops of its white, fragrant flowers, each ¾ inch wide, with a bush-like cluster of stamens in the middle. Its fragrant evergreen leaves are deep lustrous green and 1 to 2 inches long. The var. *tarentina* (Tarentum myrtle) is rather hardier, but also needs a wall; its leaves are only ½ to ¾ inch long, and it often flowers freely and prettily. Both are readily propagated by cuttings.

NEILLIA

Related to the spiraeas, the neillias are not, on the whole, such valuable shrubs. The best known of them is *N. opulifolia* (nine-bark), a North American deciduous shrub 6 to 10 feet high, of robust growth, and with hemispherical clusters of small pinkish-white flowers. More attractive are two species from China, *N. sinensis* and *N. longiracemosa*; these are less vigorous than the American one and have slender racemes of white or soft-pink blossom, very graceful and pretty. Propagation by cuttings made from half-ripened wood is an easy matter.

NESAEA SALICIFOLIA

This deciduous shrub is useful on account of its late-flowering habit. It grows about 3 feet high and produces a mass of bushy stems with willow-like dark green leaves, from the axils of which the yellow flowers are produced during July to September. It is a native of North and South America and may be readily rooted from cuttings inserted during late summer.

NOTOSPARTIUM CARMICHAELIAE

A beautiful shrub from New Zealand with rush-like green stems but hardly any leaves, and growing about 4 feet high with us. Its small pea-shaped flowers are only ⅓ inch long, but are crowded twelve to twenty together on racemes 1½ inches long, pink, and open in July. Very hard winters injure or even destroy it. It likes a sandy loam and a sunny position.

NUTTALLIA CERASIFORMIS (OSO BERRY)

A Californian deciduous shrub forming a thicket of erect stems ultimately

several feet in diameter and 6 to 8 feet high. Leaves oblong, 2 to 3 inches long. Its chief charm is in being one of the earliest shrubs to bloom, usually about mid-March, the white flowers, almond scented and about ¼ inch wide, being borne on stiffly pendent racemes 2 inches long. Blossoming very freely on the leafless shoots, it always attracts attention in spring.

OLEARIA (DAISY BUSHES)

There is only one olearia absolutely hardy, and that is *O. haastii*, an evergreen bush up to 8 feet high from New Zealand, with dark green leaves 1 inch long and, in July and August, copious clusters of hawthorn-scented, daisy-like flowers ⅓ inch wide. In the milder counties numerous other species are grown, all of Australasian origin. A fine one is *macrodonta*, with coarsely toothed leaves 3 to 5 inches long, and so free flowering as almost to cover itself in its own white flowers. Other species are *gunniana* (white), *albida* (white, and hardy on a wall), *erubescens* (ditto), *chathamica* (pale mauve), *ilicifolia* (white, and resembling *macrodonta*, but smaller), *insignis* (large leathery leaves and white flowers 2 inches wide), *semidentata* (pale and violet-purple, very handsome), *nummularifolia* (creamy-white, very distinct).

ONONIS ARAGONENSIS

This deciduous bushy shrub grows about 2 feet high and is a native of the Pyrenees and southwards into Spain. It is perfectly hardy and is a useful subject for a sunny position on the rock garden or to the front of a shrub border. The yellow pea-shaped blossoms are produced in pairs along terminal racemes up to 6 inches long from mid-May onwards. It is easily increased by cuttings of half-ripened wood.

OSMANTHUS

Evergreen shrubs, some resembling hollies, so much as to be often mistaken for them. The leaves, however, are always set on the twigs in pairs. The commonest is the Japanese *O. aquifolium*, 10 feet or more high, which bears small white flowers in September, chiefly attractive for their fragrance; the holly-like leaves are about 2 inches long, dark glossy green; several variegated forms of it are in cultivation. Very distinct from this, and as a flowering shrub much more beautiful, is *O. delavayi* from China,

which grows 4 to 8 feet high, has stiff lustrous green leaves ½ to 1 inch long, and, in April, abundant small, fragrant, pure white flowers produced in clusters. This is one of the best of all the newer Chinese shrubs; it may need wall protection in the north. *O. armatus* is another Chinese species of the holly-like class, with extraordinarily thick, stiff, spiny-toothed leaves up to 6 inches long; flowers small and white.

OSMAREA BURKWOODII

This bigeneric hybrid between *Osmanthus delavayi* and *Phillyrea decora*, was raised by Messrs Burkwood & Skipwith of Kingston-on-Thames. It is an evergreen of rather stiff habit, with dark green leathery leaves that are intermediate between those of the parents. The white fragrant flowers produced in terminal and axillary clusters contrast well with the foliage and begin to open during April. This is a useful shrub for the shrubbery or as an isolated specimen. It is very hardy but of rather slow growth, especially during the early stages. Propagation is by means of cuttings during the summer months; they root freely in a sandy compost in a warm propagating frame, but more slowly in a cold frame.

OXYCOCCUS (CRANBERRY)

Two kinds are known, our native *O. palustris*, found on moors in north Britain, Europe, Asia and North America, and *O. macrocarpus*, exclusively North American. They are creeping evergreens with wiry stems and small leaves ¼ to ⅔ inch long. The very palatable fruits are larger in the American species, being globose, red, ½ to ¾ inch wide.

PAEONIA (TREE PEONY)

P. suffruticosa is a deciduous shrub, 3 to 6 feet high, gaunt in habit, with thick, very pithy shoots. Leaves 9 to 18 inches long, divided into numerous leaflets. Flowers in the type rosy-purple and about 6 inches wide, but much larger in the numerous garden varieties, often very double and ranging in colour from white to pink, scarlet, and crimson. The tree peony is often injured by late spring frosts, which make it difficult to keep in vigour unless protection in spring is given. It should be propagated by layering, and needs a rich loamy soil. Two species better suited for our average climate are *P. delavayi*, growing up to 6 feet high with crimson flowers 3 or 4 inches wide; and *P. lutea*, much dwarfer and with yellow flowers.

PALIURUS SPINA-CHRISTI (CHRIST'S THORN)

According to legend, this is the shrub (sometimes a small tree) of whose branches the Crown of Thorns was made. It is deciduous and very thorny and has ovate leaves 1 to 1½ inches long, and very numerous, small, greenish-yellow flowers open in July, followed by dry, flat, discus-like fruits ¾ to 1 inch wide. The curious fruits, the abundance of its blossom, and its perfect hardiness, make it well worth cultivation.

PERNETTYA MUCRONATA

This evergreen shrub belongs to the heath family and comes from the region of the Straits of Magellan. It grows 3 or 4 feet high and is densely furnished with small, toothed, and spiny-pointed leaves about ½ inch long. The flowers are white, cylindrical, ¼ inch long, and come in the axils of the leaf in May. But its great charm is in its abundant crops of globose berries, each ⅓ to ½ inch wide and, in the different forms, either white, pink, lilac, crimson, or purple, persisting through the winter. It likes a cool moist soil, either peat or loam, or both mixed. It bears fruit more freely when grown in groups, many plants being functionally unisexual. One of the handsomest of all berry-bearing shrubs.

PEROWSKIA ATRIPLICIFOLIA

A deciduous shrub, woody at the base, growing 3 or 4 feet high, scented like sage, to whose family it belongs. It has stiffly erect stems furnished with grey-green leaves 1 to 2 inches long, coarsely toothed, and, from August onwards, is surmounted by panicles 9 to 12 inches long of violet-blue flowers. A few plants make a pretty group if planted in a sunny spot in good loam. A native of the Himalaya and Afghanistan.

PERTYA SINENSIS

This introduction from China is interesting as one of the shrubby members of the daisy family and for the intense bitterness of its leaves, but of no great beauty. It is deciduous, of neat habit, 3 to 5 feet high, the leaves 2 to 3 inches long, the flowers pinkish purple in 'heads' ½ inch wide.

PETTERIA RAMENTACEA (DALMATIAN LABURNUM)

Unlike the common laburnum to which it is closely related, this deciduous shrub has its racemes of fragrant yellow flowers erect. The leaves consist

of three leaflets as in the laburnums. It is of erect growth and usually 6 to 10 feet high. Dalmatia and Montenegro.

PHILADELPHUS (MOCK ORANGE)

Among June and July flowering shrubs the philadelphuses are pre-eminent, being very hardy, elegant in growth, free in flowering, and often very fragrant. Except for the 'rose syringa' (*P. mexicanus* var. *coulteri*) and some hybrids raised from it whose petals are stained at the base with purple or purplish-rose, the flowers are invariably white. They vary in diameter from 1 to over 2 inches, and have normally four petals. These shrubs enjoy a sunny position, liberal treatment at the root, and love a rich loamy soil. The only pruning they need is an occasional thinning of old worn-out growths; merely to shorten them back means the loss of a season's blossom. All are easily propagated by cuttings in July and August in gentle heat, or by leafless cuttings in November without heat.

There is a great resemblance amongst the species of *Philadelphus*, and they have become so blended by hybridization that even skilled botanists find it difficult to identify cultivated plants. There is, however, one unmistakable species, *P. microphyllus*, which only grows about 4 feet high and has leaves less than 1 inch long, and very fragrant, pure white flowers 1 inch wide. A very charming shrub. From it many valuable hybrids of comparatively low stature have been raised, such as *lemoinei*, Boule d'argent, Voie lactée, Manteau d'hermine, all of great beauty and exceptionally valuable where space is limited.

So uniform in merit are the taller kinds growing 10 to 15 feet high, that it is difficult to make a bad selection, but the following may be recommended: *latifolius*, *insignis*, *lewisii*, and *grandiflora*. Lastly, there is a hybrid called Virginal, of medium height, with very abundant large semi-double flowers, which many consider the finest of all the mock oranges.

Of the kinds with purple stained petals alluded to above, the best is *purpureo-maculatus*. The common mock orange, *P. coronarius*, which comes from the Orient, has been cultivated in England for over 300 years; its flowers, however, have a suspicion of yellow, and it is surpassed by later introductions.

PHILESIA BUXIFOLIA

This delightful little evergreen, sometimes seen 2 to 3 feet high, usually

half as much, comes from Chile, and is remarkable in being a shrubby member of the lily family. Its erect, slender stems bear hard textured leaves about 1½ inches long, glaucous underneath. Flowers solitary, made up of three petals arranged to form a sort of tube 2 inches long. Fairly hardy, it needs cool, moist conditions and protection from hot sunshine, at least in the south. A lover of peat.

PHILLYREA

P. angustifolia, with narrow leaves 1 to 2½ inches long, ¼ to ⅜ inch wide; *P. latifolia*, with ovate or roundish leaves 1½ to 2 inches long; and *P. media*, with leaves of intermediate size, together with several varieties, make a group of bushy evergreens whose dark green foliage and dense habit render them handsome shrubs of about the same dimensions and decorative value as the box and equally useful as wind-breaks and for providing shelter. They have dullish-white fragrant flowers. Of a superior class is *P. decora*, a wide-spreading shrub 8 feet high, which has oblong pointed leaves up to 5 inches long and nearly 2 inches wide, and small, pure white flowers crowded in the leaf axils. It comes from the Black Sea region, the others from south Europe.

PHLOMIS FRUTICOSA (JERUSALEM SAGE)

A sage-like evergreen shrub from south Europe, only half hardy in the colder districts, but in milder places growing several feet high. Its woolly leaves are wrinkled like those of sage and are 3 to 5 inches long, the bright yellow flowers being clustered in the leaf axils and developing in summer and autumn. The upper part of the flower is hood-shaped.

PHYLLODOCE

A charming group of dwarf, dainty evergreens, scarcely ever more than about 9 inches high, belonging to the heath family. Their leaves are usually about ½ inch, or even less, in length, $\frac{1}{16}$ to $\frac{1}{12}$ inch wide, the flowers pitcher-shaped and ¼ to ½ inch long. They like a peaty soil, shade from hot sun in the middle of the day, and moist, cool conditions generally. *P. caerulea*, found wild in Perthshire, has bluish-purple blossom; *P. empetriformis*, a very pretty Californian plant and the commonest in gardens, has them reddish-purple. *P. breweri* also from California, has a tufted habit and bright purplish-rose blossoms. A Japanese species, *P.*

Magnolia stellata

Olearia haastii

Philadelphus lemoinei 'Virginal'

nipponica, with open, bell-shaped blossoms, white tinged with pink, is also very charming. All are delightful for the rock garden.

PHYLLOSTACHYS (BAMBOO)

To this genus and *Arundinaria* the great majority of hardy bamboos belong; all the species mentioned below come from China and Japan. They require the same treatment as the arundinarias (see p. 41), from which they can usually be distinguished by the stems being more or less zigzag, with one side flattened, also in their having only two or three branches at each joint (often numerous in *Arundinaria*). The best kinds are *aurea*, with yellowish stems 10 to 15 feet high (twice as much on the Riviera), distinguished by a curious raised band beneath each joint, *P. henonis*, *P. flexuosa*, *P. nigra* with dark brown or almost black stems, *P. castillonis* with yellow-and-green stems, *P. quilioi*, and *P. viridi-glaucescens*. All these are handsome and worth growing, and all are very similar in leaf. For pure grace and luxuriance *henonis* is, perhaps, the best. *P. viridi-glaucescens* is the most vigorous and the only one liable to overspread its proper area if not kept within bounds.

PIERIS

There are deciduous as well as evergreen species in this genus, but the only ones that need referring to here are the latter. They are frequently called *Andromeda*, and their flowers are always pitcher-shaped and white. *P. floribunda* from North America is a bush of dense rounded habit, 3 to 6 feet high, very leafy, the leaves being dark green, 1½ to 3 inches long; the flowers are in a terminal cluster of erect racemes 2 to 5 inches long. *P. japonica* from Japan has rather longer leaves, and the terminal cluster of racemes is rather larger and pendulous. *P. formosa* from the Himalaya is the most vigorous; near London it is 8 feet high, and twice as much in the south-west. The racemes make a fine pyramidal cluster 6 inches wide. It is the most beautiful but least hardy of these three; still, it succeeds well near London, and for gardens south and south-west it would be difficult to mention a more desirable evergreen. These shrubs flower from early April into May and like peat or sandy loam without lime and generally moist conditions. A comparatively new species from Formosa, *P. taiwanensis*, is related to *japonica*, but shows its flowers better. It is of great beauty, but may not be hardy in colder districts. Another is *P. forrestii* from

western China, a very charming shrub distinguished by the beautiful salmon-red of its young shoots and leaves. The pyramidal flower clusters are 4 to 6 inches high and, being erect, stand well above the foliage. One of the best new shrubs from China.

PIPTANTHUS

P. nepalensis, a nearly deciduous Himalayan shrub, belongs to the broom family and grows 8 to 12 feet high. Its leaves consist of three leaflets, each 3 to 6 inches long, glaucous beneath. It blossoms in May, the flowers coming in erect, stiff racemes 2 to 3 inches long and being yellow, pea-shaped, 1½ inches long. It is not hardy at Kew except against a wall. *P. concolor*, a Chinese species, is very similar, but has leaves green on both sides.

PITTOSPORUM

A large genus of evergreens, widely dispersed in the warm, temperate parts of the Old World, which is well represented in the gardens of the south-west, but is mostly too tender for our average climate. *P. tobira* from Japan is a handsome plant for a wall, having dark green leathery leaves up to 4 inches long, and clusters of fragrant flowers, each 1 inch wide, creamy-white. *P. crassifolium* from New Zealand is also grown on a wall, and has dark purple flowers. *P. tenuifolium* is, perhaps, the hardiest of the pittosporums, but is killed in very severe winters; it also is from New Zealand, a tall elegant shrub with pale, shining green, roundish oblong leaves and chocolate-purple flowers ½ to ¾ inch wide, scented like honey. It is a variable species, the best known of its forms being a smallish leaved one known as *P. mayi*.

POLYGALA (MILKWORT)

P. chamaebuxus is a charming little evergreen under 1 foot high, with box-like leaves ½ to 1 inch long. The plant does not belong to the broom family, but the flowers very closely resemble theirs in shape; they are about ½ inch long, the wing petals creamy-white, and there is a bright yellow patch at the end of the keel. In var. *grandiflora* (*purpurea*) the wing petals are purple. The flowers open in April and May. A native of elevated calcareous regions in Central Europe, it loves cool moist conditions. A second species is *P. rupestris*, a native of the eastern Pyrenees on the Spanish side. It is a procumbent evergreen with very narrow leaves

½ to 1 inch long, the flowers bright rose-purple and yellow. Both are best adapted for the rock garden.

POTENTILLA (CINQUEFOIL)

Of the comparatively few shrubby species of this large genus of rosaceous plants, by far the most important is *P. fruticosa*, which is very widely spread over the cooler parts of the northern hemisphere. It varies a good deal in colour of flower and in leaf character. Typically, it is a deciduous bush of rounded habit, 2 to 4 feet high, with pinnate leaves 1 to 1½ inches long, usually made up of five leaflets. Flowers 1 to 1½ inches wide, buttercup-yellow, continuing to open from July to September. The following varieties are cultivated: *friedrichsenii*, pale yellow; *grandiflora*, yellow; *leucantha*, white; *ochroleuca*, sulphur-yellow; *pyrenaica*, yellow, dwarf; *veitchii*, leaves grey-green, flowers white; *vilmoriniana*, leaves silvery, flowers creamy-white.

Farrer introduced a charming yellow-flowered form from west China with very narrow leaflets (var. *farreri*).

P. davurica (*glabra*) is a dwarf species 12 to 18 inches high, with white flowers; useful for the rock garden. *P. salesoviana* is a loose habited shrub with leaves 2 to 4 inches long and rose-tinted flowers in a cluster at the end of a stalk several inches long. Both are Siberian.

PRINSEPIA

Prickly deciduous shrubs closely related to *Prunus*, with a lax spreading habit and narrow leaves 2 to 3 inches long. *P. sinensis* from Manchuria has yellow flowers; *P. uniflora* from China has white ones. They come in early spring two to four together in the leaf axils, each from ½ to ¾ inch wide. The flowers are frequently injured by frost, and the shrubs are better suited for climates with a later spring and severer winter than ours.

PRUNUS

The majority of the species of *Prunus*, which includes cherries, plums, peaches, almonds, apricots, and laurels, are trees, in regard to which our companion volume on Trees should be consulted. But there is also a considerable number of shrubs. Of the cherry (or *cerasus*) group, a very pleasing early one, flowering in March, is *tomentosa*, producing white flowers tinted with rose, ¾ inch wide, in great abundance. Closely related to it is *canescens*; both have woolly leaves and come from China. On the

Alps is found *P. fruticosa*, the ground cherry, a pretty, low, spreading shrub up to 3 feet high, with small glossy green leaves and white flowers. *P. japonica* is best known by its double flowered forms, both white and pink, opening in April or early May, very pretty, and often forced early into flower for greenhouses. *P. pumila* and *besseyi* are North American with white flowers scarcely ½ inch wide, but very profuse.

No garden can afford to be without one or more of the Japanese cherries now grouped under *serrulata* and *lannesiana*. They are naturally small trees, but, if room be lacking, can be kept dwarf by pruning. Nothing in the genus can compare with them.

Of the plum group, one species only needs mention here, and that is the sloe or blackthorn (*P. spinosa*), especially its double flowered form, which possesses all the purity of the wild plant, but lasts considerably longer in beauty.

Among the almonds and peaches (*amygdalus*), the best shrub is *P. triloba plena*, with double flowers 1½ inches wide, delicate rose, appearing in April and very beautiful. An admirable shrub for a south wall, although perfectly hardy.

All the species hitherto mentioned are deciduous, but the last group, the cherry laurels (*laurocerasus*), are evergreen. Two species only are hardy, both very well known—the Portugal laurel (*lusitanica*) and common laurel (*P. laurocerasus*). The former with its black-green glossy leaves and slender racemes 6 to 10 inches long, of small white flowers opening in great profusion during June, is a beautiful evergreen if allowed to grow naturally and given room; var. *myrtifolia* is dwarfer and has smaller leaves; var. *azorica* has larger leaves. *P. laurocerasus* is also a very handsome evergreen if the pruner be kept at bay, but no shrub is more ill-used in that respect. Naturally it is a very big shrub, 15 to 20 feet high and twice as wide. It flowers in April, and its racemes are shorter than those of *lusitanica*. It has many varieties, the best of which are *caucasica*, *colchica*, *otinii*, and, finer than all, *magnoliaefolia*, with leaves up to 12 inches long and 4 inches wide. *P. laurocerasus* is a native of eastern Europe and Asia Minor.

All the prunuses thrive in loamy soil containing lime.

PTEROSTYRAX HISPIDUM

A vigorous deciduous shrub 15 feet or upwards high, or even a tree in

Pieris taiwanensis

Prunus spinosa plena

Rhus cotinus

Spiraea veitchii (right) in the Gardens of Clare College, Cambridge

warm localities. The leaves are 3 to 8 inches long, half as wide, and the white, fragrant flowers develop in June and July on quite pendulous panicles 4 to 9 inches long. Hanging beneath the branches, they make a very attractive picture. This species (sometimes known as *Halesia*) is not so much grown as it should be. A native of Japan and China.

PUNICA GRANATUM (POMEGRANATE)

The pomegranate is not quite hardy, and needs wall protection or some nook like the corner of a house facing south. It is deciduous and has narrow leaves 1 to 3 inches long, flowers solitary or in pairs, scarlet, 1 to 1½ inches wide. The showiest form is the double-flowered one. The large, roundish, yellowish fruits, full of juice and seeds, are sometimes seen in London shops, but do not ripen with us.

PYRACANTHA

There is no hardy shrub more beautiful in fruit than the oldest and best known of the pyracanths, *P. coccinea*, the fire bush or 'buisson ardent' of the French. It is often grown on a wall, for which at all seasons, being evergreen, it makes a pleasing cover, but in autumn acquires much brilliance by its great crops of scarlet berries. It is perfectly hardy and equally brilliant in the open ground. At Kew there are bushes 8 to 10 feet high, which hardly ever fail to give splendid crops of fruit; they have, however, to be netted to save them from blackbirds. Chinese kinds are *atalantoides* and *yunnanensis*, which have bigger leaves, stronger, more open habit, and smaller, later ripening fruit not so attractive to birds. *P. rogersiana*, with the smallest leaves of any (only 1 to 1½ inches long), is also Chinese and an elegant shrub bearing golden-yellow to reddish-orange fruits very beautiful at its best. Lastly, there is *P. angustifolia*, a very handsome evergreen for a wall; it has narrow leaves about 2 inches long and ⅓ inch wide, and brilliant orange fruits that remain on the branches till March. A native of western China.

Pyracanth fruits are like an orange in shape and always about ¼ inch wide. Closely related to the hawthorn, they differ in being evergreen. A light loamy soil suits them, and they must have sunshine. Seeds afford an easy means of increase, but cuttings should be used for the best form of *P. coccinea*, which is called *lalandei*, with more orange-coloured fruits; also for the finer forms of *P. rogersiana*.

QUERCUS (OAK)

The oaks, of course, include some of the giant trees of Europe and the northern hemisphere, and very few are pure shrubs. Half a dozen species from Japan, although often trees at home, have never got beyond the shrubby state in this country. They are *acuta*, *cuspidata*, *glauca*, *edulis*, *phillyraeoides*, and *myrsinaefolia*, all handsome evergreens with shining leaves. From the Orient comes another shrub, *Q. coccifera*, the Kermes oak, a dense, rounded, stiff-habited evergreen bush up to 10 feet high. *Q. ilex*, the holm oak, although naturally a large tree, is so amenable to pruning that it can for many years be kept in the shrubby state by an annual clipping. Very useful as a shelter bush near the sea. Propagate by seeds (acorns) where possible or by grafting. Evergreen oaks should always be transplanted in the spring, when new growth is commencing.

RAPHIOLEPIS

R. *umbellata*, a slow growing, sturdy evergreen of the rose family, ultimately reaches 6 to 10 feet high. Leaves very stout and leathery, oval, 2 or 3 inches long, dark green. Flowers fragrant, white, ¾ inch wide, abundantly produced in June on panicles 3 or 4 inches high. A desirable Japanese shrub. R. *delacourii* is a hybrid between this and R. *indica*, a more tender species from China, and has pink flowers, more pointed leaves, and is of looser, more graceful habit, flowering very prettily in spring. Both are hardier than is generally believed. Propagate by means of seeds, or by cuttings of half-ripened wood.

RHAMNUS

The best rhamnus is R. *alaternus*, a south European evergreen 10 or 12 feet high, with oval leaves 1 to 2 inches long, shining dark green; flowers yellowish-green, small; fruit black, ¼ inch long. It is a pleasant enough evergreen of about the same decorative value as the phillyreas, but of no distinction. R. *imeretina* is deciduous, and has, when grown in good soil, very large leaves as much as 10 inches long and 4 inches wide, with fifteen to thirty pairs of prominent parallel veins. A native of the Caucasus. The rest of the rhamnuses may be left to botanic gardens.

RHODODENDRON

It is only possible briefly to mention this magnificent genus of evergreen and—as it includes azaleas—deciduous shrubs. There are several books

dealing exclusively with rhododendrons, to which the reader must be referred for detailed information.

Provided soil conditions are suitable, i.e. lime free, there is possibly no finer genus of shrubs than the various species, hybrids and varieties of rhododendron. They range from miniature plants a few inches high to specimens that ultimately reach almost tree-like proportions. There is also great diversity in the range of colour shades and also in the type of flowers, some being small and borne several together, while others form massive trusses of many large trumpet-shaped flowers.

The shrubs commonly known as azaleas are also rhododendrons. Most of these are deciduous, but there are also evergreen kinds such as the well-known Kurume azaleas which make low, spreading bushes with small leaves and very abundant clusters of small, white, pink, mauve or red flowers in spring.

Rhododendrons which do not belong to the 'azalea' section are all evergreens, many with large and notably handsome leaves, though there are also small-leaved kinds mostly of low growth.

The three most generally useful groups for ordinary garden planting are the hardy hybrid evergreen rhododendrons, the hybrid deciduous azaleas and the Kurume azaleas. These are all distinguished by fancy names, or, in the case of the deciduous azaleas, are sold as mixed seedlings under group names such as Ghent azaleas, Mollis azaleas, Knap Hill azaleas, etc. All are quite hardy and all thrive in loamy, lime free soils. On the whole the deciduous azaleas prefer more sun than the evergreen rhododendrons and the Kurume azaleas, but all are very adaptable in this respect. The one thing they do not like is a hot dry soil. The colour range is extensive and long lists of varieties with detailed descriptions will be found in nursery catalogues.

RHODOTHAMNUS CHAMAECISTUS

A low evergreen rarely more than 12 inches high, with bristly margined leaves only ½ inch long and pale rose blossoms 1¼ inches wide, two to four in a cluster, opening in April. Native of the Austrian Alps, where, although it belongs to the heath family, it grows on limestone. A delightful little shrub for the rock garden. Young stock should be obtained by division. It is, in fact, the only successful method to adopt.

RHODOTYPOS KERRIOIDES

A deciduous shrub up to 6 feet high of the rose family, and related to *Kerria*, but with leaves arranged in pairs and white flowers 1½ to 2 inches wide, with only four petals. Very hardy and grows well in most soils; easily increased by cuttings. A native of China.

RHUS (SUMACH)

Several of the shrubs that are commonly known as *Rhus* in gardens in fact belong to the allied genus *Cotinus* where they will be found in this book. R. *toxicodendron*, the poison ivy, is the most famous of the species of true *Rhus*. Its leaves change in the fall to a glorious red, but so dangerous is it through the painful eczema-like eruptions that contact with it induces in many persons, that it is better left out of the garden altogether. It sometimes masquerades as *Ampelopsis Hoggii*.

R. *glabra*, *typhina*, and *trichocarpa* are pinnate-leaved kinds all turning rich red in autumn and well worth growing for this alone. In many ways R. *typhina* is the best of them, a small tree, 10 to 15 feet high, with curious erect crimson fruit clusters which have suggested the common name stag's-horn sumach. All the sumachs are easily accommodated.

RIBES (CURRANT, GOOSEBERRY)

The two groups composing this genus are chiefly distinguished by the first being unarmed, the second by being more or less spiny. They are all shrubs, very easily grown in a loamy soil, and easily propagated by cuttings.

Currants. R. *alpinum*, a native shrub ultimately 6 feet or more high, has little beauty of flower or fruit, but is a bush of neat habit, very leafy, and chiefly valuable because it thrives in shade. R. *laurifolium* is evergreen and one of Wilson's introductions from China, noticeable for flowering as early as February; blossom pale, greenish-yellow, in pendulous racemes 2 inches or more long, quite pretty at that season. R. *sanguineum*, the flowering currant from north-west America, is undoubtedly the best and most ornamental of all the currants; it makes a shapely bush ultimately 6 to 8 feet high, with soft leaves of blackcurrant shape, bearing in April drooping racemes, 2 to 4 inches long, of deep rosy-red flowers; the var. *albidum* has white flowers only slightly rose tinted; var. *brocklebankii* has yellow leaves and is one of the best shrubs of that colour; whilst var.

splendens, one called Edward VII and Pulborough Scarlet are the three with most richly coloured flowers. *R. aureum* has spicily fragrant, golden-yellow flowers opening in April on arching racemes 1 to 2 inches long.

Gooseberries (Grossularia). *R. speciosum (fuchsioides)*, a Californian shrub, is the handsomest of this group. It has gooseberry-like leaves about 1 inch wide, and rich red flowers that resemble tiny fuchsias in shape, hanging profusely in clusters from beneath the branchlets, the highly coloured stamens standing out ¾ inch beyond the rest of the flower. In cold districts it is better grown on a wall. Another of this group is *R. cruentum*, 4 to 6 feet high, with crimson and white flowers followed by hedgehog-like red fruits covered with spines ¼ inch long. Very distinct from either is *R. leptanthum*, with tiny leaves and numerous small white flowers; very dainty.

Ribes is a large genus, but these few species will represent it sufficiently.

ROBINIA ('ACACIA')

The well-known *R. pseudacacia*, or 'acacia', is, of course, a tree, but the four following species are shrubs. Like it they have pinnate leaves and flowers borne in loose racemes. *R. boyntonii* grows up to 10 feet high and has rose-purple or pink flowers. *R. elliottii*, the dwarfest of all these 'acacias', grows only 6 feet high, its flowers rose-purple, each about 1 inch long, five to ten of them in a cluster, the whole plant very downy—a distinctive character. *R. hartwigii* will attain 12 feet in height and its rose-purple flowers make it very handsome in July. These three are comparatively new to gardens, but *R. hispida* is an old denizen. It is usually grafted on stocks of *R. pseudacacia* and thus made into a small standard tree, but naturally it is a shrub; the flowers are rosy-red and it is often called the 'rose acacia'. The typical hispida has bristly shoots, but its variety *macrophylla* has them quite smooth and the flowers are larger. All these shrubs are very handsome when in bloom, which is usually in June. They belong to the pea family and the blossom resembles that of the pea in shape. They are quite hardy, like a good loamy soil, and should be placed in full sunshine.

ROMNEYA

Two beautiful Californian plants, semi-shrubby in character, and belonging to the poppy family, constitute this genus. *R. coulteri* grows 8 feet or

even more high, its soft, half-woody shoots bearing deeply lobed leaves of a glaucous colour; the flowers, either solitary or in pairs, opening from July onwards, are each 4 to 6 inches wide, the petals satiny white, delicate in texture, with a conspicuous mass in the centre, 1 inch or more across, of golden-yellow stamens. The second species, R. *trichocalyx*, is not so tall, rather hardier, but otherwise similar, except that the calyx, smooth in *coulteri*, is furnished with bristles. R. *trichocalyx* grows well in light loamy soil on a sunny border south of a wall or greenhouse, but in cold districts *coulteri* may be killed to ground-level in winter, but shoots up again in spring. Propagated by root cuttings or seed.

ROSA (ROSE)

The genus *Rosa* is a large one, even if, as in this work, we have to confine ourselves to the wild kinds. In general characteristics these wild roses very much resemble each other, and the common dog rose of our hedgerows with its spiny stems, its pinnate leaves of five or seven leaflets, its well-opened flowers of five petals, and its red fruits, may be taken as very typical of them all. Some species have black fruits, some have only three leaflets, some as many as eleven to each leaf; they vary also in habit and in stature. Unless special interest is taken in them, the following comparatively few species may represent the wild roses in most gardens:

R. *bracteata* (Macartney rose), of rambling habit, almost or quite evergreen, leaflets up to eleven, very glossy, flowers white, 3 to 4 inches wide; rather tender, and wall treatment preferable; *cantabrigensis*, an attractive hybrid raised at the Cambridge Botanic Garden, with large yellow flowers and dainty foliage; *ecae*, a delightful species with fern-like foliage and bright yellow flowers; *hispida*, of erect habit, very prickly, 6 feet high, flowers at first yellow, changing to creamy-white, 2 to 3 inches wide, fruit nearly black; a very attractive species of the Scotch rose group, flowering in May; *hugonis*, from China, a graceful bush 8 feet high, with small leaflets, yellow flowers 2 inches wide, and black-red fruits; *lutea* (Austrian briar), 3 to 5 feet high, leaflets small, flowers of the richest, brightest yellow, 2 to 3 inches wide; its var. *punicea* (Austrian copper) has coppery-red flowers; *macrophylla*, a vigorous bush 8 feet high, with deep rose flowers 2 to 3 inches across, but chiefly notable for its handsome, red, pear-shaped fruits 1½ inches long; *moyesii*, a Chinese species related to *macrophylla*, but with flowers deep red, unique in shade among roses, and

large bottle-shaped red fruits; *multiflora*, a graceful, wide-spreading, vigorous shrub with large clusters of small white flowers; *nitida*, a dwarf, very bristly stemmed kind that turns a good red in autumn; R. *pendulina* an almost thornless rose, 6 to 8 feet high, flowers deep pink, fruit bright red; *primula* a very pretty and early flowering rose, with dainty foliage and yellow flowers; *rubiginosa* (sweet briar), wild in Britain, but worth a place for its delightfully scented leaves; *rugosa*, a sturdy Japanese sort with large wrinkled leaflets, very fragrant, purplish-red flowers, and large red fruits; *sericea*, an elegant Himalayan bush 12 feet high, with small foliage and white flowers with usually only four petals; *omeiensis* from China is very similar, and its var. *pteracantha* is remarkable for its large triangular, translucent red spines; *spinosissima* (Scotch rose), a dwarf bush with spiny, bristly stems, white flowers, blackish fruits; it has many garden forms, but the var. *altaica*, wild in Siberia, is very distinct in its taller, stronger growth (up to 6 feet) and larger flowers; very beautiful also is var. *lutea*, 3 feet high, its flowers of a lovely buttercup-yellow; *webbiana* from the Himalaya, and *willmottiae* from China are two very elegant related species with leaflets about ½ inch long, and clear, pale, rosy-pink flowers; *wichuraiana*, a prostrate species, very vigorous, leaves shining green, flowers white, one parent of the large and popular rambler roses.

ROSMARINUS OFFICINALIS (ROSEMARY)

This delightful old scented evergreen, grown in England for at least 400 years, will in mild districts grow 6 or 7 feet high and as much in diameter. It blossoms in May, the flowers being pale lilac and white. In very hard winters it may be injured or even killed, and it is curious that old plants are less able to withstand extreme cold than young ones. Easily increased by cuttings, and likes a sunny position. There are several good varietal forms that are useful and interesting.

RUBUS (BRAMBLE, RASPBERRY)

As with the roses, the number of kinds of *Rubus* is so great that only a small proportion need be grown. The two leading types are represented by the blackberry and the raspberry, the former having a fruit which adheres to its receptacle, the latter having one which comes off easily when ripe.

R. deliciosus, 6 feet or more high, is one of the best as a flowering shrub, and has white, rose-like flowers 2 inches wide, opening in May. *R. parviflorus* and *odoratus* are two handsome North American kinds, the first with pure white flowers in June, the other with bright purple, fragrant ones in July; both are vigorous shrubs up to 8 feet high, with fine large leaves. *Spectabilis*, another North American species, with purplish-red flowers in June, has trifoliate leaves and yellow fruit. Two varieties of brambles are worth growing—*R. thyrsoideus plena*, with very double white flowers, and *ulmifolius* var. *bellidiflorus*, with 'bachelor-button'-like rosy-red ones; both are useful in flowering as late as July and August.

A curious and interesting group has white stems, the best being *R. giraldianus* from China, growing 8 to 10 feet high, with long arching stems. In the warmer counties another Chinese species, *R. tricolor*, makes a perfectly prostrate, dense ground cover for shady places. Lastly, *R. phoenicolasius*, the Japanese wineberry, may be grown for its handsome bright red fruits.

RUSCUS

A curious group of evergreen shrubs belonging to the lily family, our native butcher's broom, *R. aculeatus*, being the commonest. It grows 2 to 3 feet high, has spine-tipped leaves, and is one of the very best of all hardy shrubs for dense shade; the plants are unisexual, and the female bears handsome bright red berries ½ inch wide. *R. hypoglossum*, growing about 1 foot high, is also valuable for growing in heavy shade. It may be mentioned that the so-called leaves are really flattened branches, in the centre of which the flowers and fruits appear.

RUTA GRAVEOLENS (RUE)

An evergreen 2 to 3 feet high, with much divided leaves of a glaucous hue and 3 or 4 inches long. Flowers dull yellow, ¾ inch wide, borne in terminal clusters from June onwards. The rue is chiefly grown as a medicinal shrub and has a rather acrid character, but, blossoming late, it is not without merit as a flowering shrub. A native of south Europe.

SALIX (WILLOW)

The shrubby willows, both true species and hybrids, are extraordinarily numerous, but except in wet places have little value in the garden, and

Viburnum opulus roseum

Viburnum tomentosum plicatum

Yucca gloriosa

Zenobia pulverulenta

need brief mention only. One of the best is *S. incana*, with narrow, rosemary-like leaves 2 to 4 inches long, dark green above, blue-white beneath; it is a bush 8 feet or more high and wide, very charming for the lakeside. *S. repens* is also a pretty grey-green shrub, especially its var. *argentea* with silvery-grey foliage; in both forms the leaves are under 1 inch in length. *S. bockii* from west China is a dwarf, small-leaved shrub, interesting because it flowers in autumn. *S. medemii* although a large-growing species, is worth growing for its early large catkins, produced often in January or February. If hard pruned after flowering each year, this fine willow from Persia may be kept as a reasonably-sized shrub. *S. purpurea*, the purple osier, is a large bush of diffuse, very leafy growth, with narrow leaves, vividly glaucous-blue beneath; a graceful and attractive bush. *S. vitellina* and its var. *britzensis*, the first with bright yellow shoots, the latter with red ones, are naturally trees, but if planted small may for years be kept as shrubs by cutting them hard back every March; they send up during the summer a crowd of long, slender wands which, after the leaves fall, give very bright colour effects the winter through. *S. daphnoides* may also be treated the same, its young growth being covered with a conspicuous, plum-coloured bloom. Lastly may be mentioned *S. fargesii*, an introduction from China. It is deciduous, grows 6 to 8 feet high and is of spreading shape. The young shoots are remarkable for their shining brown colour except at first, and the winter buds are red. The leaves, up to 7 inches long, are distinct on account of the number of the deeply sunk veins and sometimes as many as twenty-five pairs may be counted on a single leaf. Very distinct and handsome. Willows are easily propagated by cuttings of ripened wood inserted in the open ground at any time from November to March.

SAMBUCUS (ELDER)

The elders are usually coarse ungainly shrubs and are only worth representing in the garden by the yellow-leaved form of common elder (*S. nigra* var. *aurea*), the white variegated one, *albo variegata*, and various cut-leaved forms of *S. racemosa* such as the vars. *laciniata*, *plumosa*, *plumosa aurea*, and *tenuifolia*. All these may to some extent be kept in bounds by an annual shortening back of the growths. The white-fruited variety of *S. nigra* is interesting from the fact that elderberry wine made from it is clear

and colourless. The elders love semi-shade, and are easily increased by cuttings.

SANTOLINA (LAVENDER COTTON)

S. chamaecyparissus is a charming little bush of the daisy family, 1 to 2 feet high, of semi-woody character, one of the whitest of all shrubs and useful in colour schemes. The leaves are very dense on the shoot, the largest only 1 to 1½ inches long, stoutly and bluntly toothed, and covered with a white felt. Flowers bright yellow, in hemispherical heads ½ to ¾ inch wide, borne at the top of a long stalk in July. South Europe. Differing chiefly from this by its longer leaves and longer leaflets is *S. neapolitana* (often erroneously called *rosmarinifolia* in gardens). Is also is remarkable for the whiteness of its foliage. As a flowering shrub, too, it has claims to notice, the flower-heads being bright yellow, ¾ inch wide, six to twelve of them, each on a slender stalk, 3 to 6 inches long, opening near the end of each shoot in July. Both are easily propagated by cuttings, and love a sunny position.

SARCOCOCCA

Low shrubs with white, fragrant, rather inconspicuous flowers, but forming pleasant evergreen furnishing for shady places. *S. humilis*, 1 to 1½ feet high, *S. ruscifolia*, rather taller, and *S. saligna*, up to 3 feet high, are in cultivation, all native of China and readily increased by division. They blossom in winter and early spring.

SENECIO

Several very attractive evergreen shrubby composites from New Zealand have proved to be more or less hardy in all but the colder districts, if given a protected spot, and quite so farther south and west. They are characterized by grey or whitish foliage and panicles of yellow flower-heads. The hardiest is *laxifolius*, up to 6 feet high, and flowering in July; superior to it, but dwarfer and slightly more tender, is *S. greyi*, with a denser inflorescence in June. *S. compactus*, with dark green leaves, white beneath, and conspicuously crinkled at the margins, is also slightly tender. All three are excellent for seaside gardens, and the more favoured counties.

SHEPHERDIA

Related to *Elaeagnus*, from which the two cultivated deciduous shrubs belonging to this genus are distinguished by bearing their leaves in pairs at each joint. They are *S. argentea* and *S. canadensis*, of little merit in this country, but, in places with a hotter summer, handsome for the free crops of scarlet or orange-coloured berries. The leaves and young shoots are covered with silvery or brownish scales. Both are sun-lovers.

SKIMMIA

Evergreen aromatic shrubs belonging to the rue family, cultivated chiefly for the beauty of their red fruits. Two species, with some hybrids between them, are chiefly grown. The better one is *S. japonica*, a dense bush 3 to 5 feet high, much more in width, its leaves leathery, 3 or 4 inches long; flowers white, fruit globose or top-shaped, $\frac{1}{3}$ inch wide, red like a holly berry, and borne in clusters 2 or 3 inches high. The plants are unisexual, and artificial fertilization is desirable. This is generally done by smearing a rabbit's tail with pollen by passing it over the male flowers and then dusting over the female ones. *S. fortunei* is not so vigorous, and its fruit is darker and more egg-shaped; the plants are bisexual and self-fertile. Natives of Japan and China, requiring a good loamy soil. Propagated by cuttings.

SOPHORA VICIIFOLIA

A delightful shrub of the broom family, 6 or 8 feet high, of graceful form, its slender twigs furnished with pinnate leaves about 2 inches long, carrying seven to ten pairs of tiny leaflets. The pea-shaped flowers are in clusters 2 inches or more long, opening in June; the petals blue-white, the calyx blue. A native of China, and very hardy. Propagate by cuttings made with a 'heel' during July or August, inserting them in sandy soil in a heated propagating frame.

SORBUS

Most of the whitebeams or mountain ashes are small trees, but there are several of shrubby habit that merit mention in this book, being useful for the small garden and for association in a mixed planting of shrubs. *S. chamaemespilus*, a native of the Alps of Europe, was introduced so long ago as 1683, but is not common in gardens and not planted so much as it

should be. This shrubby sorbus is very handsome when in fruit. It has rosy-pink flowers, and the whole shrub, especially the twiggy branches is covered with a cobweb-like substance, especially during the early stages. *S. glomerulata*, a native of China, has handsome pinnate leaves that are silvery beneath. The flowers are white and produced in large heads. They are followed by pearly-white fruits. *S. gracilis* is a Japanese species of compact habit, bearing clusters of white flowers followed by red fruits. *S. prattii* is another Chinese species that will form a large shrub or small tree. It is related to *S. glomerulata* and, like that species, has pearly-white fruits. *S. vilmorini* is another Chinese species introduced by the missionary Delavay in 1889. It has most distinctive fruits that are at first rosy-red, later fading to pinkish-white.

SPARTIUM JUNCEUM (SPANISH BROOM)

A tall shrub of gaunt habit, with rush-like stems and hardly any leaves. Flowers fragrant, borne from July to September in racemes, each flower 1 inch long, pea-shaped, rich bright yellow. A sun-loving shrub from south Europe, which should be planted with other dwarfer ones that will hide its naked base. It does not need a rich soil and is useful for a dry place. Propagated by seed, which it bears abundantly. Young plants should be gown in pots until planted out permanently, and cut over occasionally in their young state to induce branching near the base.

SPIRAEA

A large genus belonging to the rose family, including herbs as well as shrubs, the latter all deciduous. The flowers are most frequently white (entirely so in regard to spring-flowering kinds), pretty uniform in size, and usually from $\frac{1}{4}$ to $\frac{1}{3}$ inch wide, with normally five tiny rounded petals. But what they lack in size they make up in number, and the spiraeas include some profuse flowering, extremely ornamental shrubs, only the best of which can be referred to here. All mentioned here are gross feeders and need a rich deep loam; an occasional top dressing of manure is also beneficial.

The strongest growing section of the genus has pinnate leaves of the mountain ash type and large, terminal, pyramidal panicles of white flowers; the best are *S. arborea*, a Chinese species, and *S. aitchisonii* from Kashmir; both will grow 10 feet high, but as they flower on the current

season's shoots from July onwards, the shoots that flowered the previous summer may be cut well back in March and the plants in that way kept fairly low and compact. These two species and others of this section are now placed by botanists in the genus *Sorbaria* and under this name they may be found in some catalogues.

A second group that flowers at the same (summer) season on the current year's shoots may also be pruned at the same time, but they are naturally much dwarfer. *S. japonica* grows 3 or 4 feet high, producing a thicket of erect stems, its flowers rosy-red in flat clusters several inches wide; its var. *bumalda* is only half as high, the best form being one called Anthony Waterer, flowers rich carmine. *S. margaritae* is another of the same group with bright pink flowers. Flowering in July is *S. menziesii triumphans*, the flowers in erect panicles 4 to 8 inches high, purplish-rose.

Thirdly, there is the group that blossoms in spring or early summer on the shoots made the previous year. It is a large group, and the only pruning possible with them is a thinning out of old stems. All have abundant white flowers in small clusters. The following may be recommended: *S. arguta*, a shapely bush 6 feet high, April; *nipponica* (*bracteata*), 6 feet high, flowers in June on short leafy twigs; *canescens* (*flagelliformis*), a graceful shrub 6 to 10 feet high, with long arching branches, on the upper side of which the flowers are borne in June and July; *thunbergii*, with narrow linear leaves, April; *veitchii*, similar in habit to *canescens*, but distinguished by untoothed leaves and an even superior beauty; *prunifolia plena*, a garden form of Chinese or Japanese origin, 4 to 8 feet high, with very double flowers ½ inch wide; and *van houttei*, a graceful shrub 6 feet high, flowering in May and June.

Finally, there is *S.* (*Holodiscus*) *discolor* (*ariaefolia*), a large, loose habited graceful shrub 8 to 10 feet high, flowering in July on pendulous panicles up to 12 inches long.

STACHYURUS

Two species very similar to each other are known—*S. praecox* from Japan and *S. chinensis* from China. They are deciduous shrubs 6 feet or more high, from whose spreading arching branches in March hang the stiffly pendulous racemes of yellow flowers, each raceme 3 inches long, each flower ⅓ inch wide. Very distinct and attractive hardy shrubs

requiring a loamy soil. Propagate by seeds, cuttings of half-ripened shoots in July, or by division.

STAPHYLEA (BLADDER-NUT)

Deciduous shrubs with pinnate or trifoliate leaves and racemes of white flowers, followed by curious, inflated, bladder-like fruits. *S. colchica*, from the Caucasus, is 6 to 10 feet high, with erect flower clusters 3 to 5 inches long, each flower ¾ inch wide; fruits 3 to 4 inches long, 2 inches wide. *S. pinnata*, naturalized in some parts of Britain, but coming originally from the Continent, is less ornamental and its fruits are smaller. *S. coulombieri* is a hybrid between the two. More ornamental than any, perhaps, is *S. holocarpa*, an introduction from China, with charming pink flowers. All blossom in May and like a good deep loam. They can be propagated by cuttings or seeds.

STEPHANANDRA

Two Japanese shrubs of the rose family, with copious but small, dullish-white flowers in June and July. The handsomer one as regards habit and foliage is *S. incisa*, a graceful deciduous species up to 6 feet high, the leaves 1½ to 3 inches long, deeply lobed and toothed, very charming and elegant. *S. tanakae* has foliage not so fern-like in character, but it turns an orange colour before falling; the stems also, during winter, are an attractive bright brown. Thriving in good loam, they may be increased by division or by late summer cuttings.

STEWARTIA

Deciduous shrubs of high distinction, related to, and with flowers not unlike, the single-flowered forms of camellia. The most beautiful, perhaps, is *S. malacodendron* (*virginica*), whose flowers are 3 inches wide, white, with a central cluster of purple stamens. *S. ovata* (*pentagyna*) has flowers 4 inches wide, the stamens yellow in the type, purple in var. *grandiflora*. Both these are natives of the south-east United States, where the former becomes a small tree; here they are rarely more than 6 feet high. *S. sinensis* from China and *S. pseudo-camellia* from Japan are tree-like in habit; they have white flowers about 2 inches wide. *S. koreana*, a more recent introduction from Korea, has flowered freely at Kew and is a beautiful species. All the stewartias like a sheltered spot and in their early stages enjoy some

peat mixed with the soil, but when well established thrive in a light, well-drained loam, which must however be free from lime. They flower in July and August. Propagate by seeds or cuttings inserted in late summer.

STRANVAESIA

Evergreen shrubs, of which three species are worthy of mention, all Chinese; they are *S. undulata* (usually of spreading habit), *S. davidiana* (taller), and *S. salicifolia* (erect growing). All have small white flowers in clusters 2 inches wide, followed by berries about the size of common haws, brilliant orange-red in *undulata*, darker red in the other two, which are also distinguished by their larger, longer leaves. Best propagated by seeds.

STYRAX

A genus of great beauty and distinction, of which three deciduous species are well worth growing, all with pure white flowers and inclined to be small trees. Most frequent in gardens is *S. japonicum*, which is really better grown as a small tree than as a shrub, because its pendent blossoms hang on slender stalks in rows beneath the branches, and their exquisite beauty is most evident when seen from underneath; leaves rather privet-like. With much larger leaves, and with flowers in erect racemes, 4 to 8 inches long, are *S. obassia* and *S. hemsleyanum*, the former from Japan, the latter from China.

SYCOPSIS SINENSIS

This evergreen shrub is a native of China and belongs to the Witch Hazel family. Apart from being quite a handsome evergreen, it has considerable value as an early flowering subject, because its reddish brown flowers with yellow stamens, produced during February, are both remarkable and showy. It thrives in almost any position, but requires a soil without lime to do well. Cuttings made from fairly ripened shoots will root in a warm propagating frame. This shrub is perfectly hardy and once planted needs little attention.

SYMPHORICARPUS

The well-known snowberry, a deciduous shrub 3 feet high, with snow-white globose fruits ½ inch wide or more, is *S. albus* (*racemosus*) and is the

more useful species in the genus. It will pay for better treatment than it usually gets. Naturally it makes a dense thicket of stems ultimately so crowded that they become weakly and comparatively barren. The plants should be taken up every five or six years, divided, and the stronger pieces replanted thinly. If planted in good loamy soil they will produce fine crops of fruit. Also worth mentioning here is *S. orbiculatus variegatus*, which has oval leaves, about 1 inch long, edged with yellow, making a good variegated shrub. The typical *orbiculatus* has red roundish fruits about $\frac{1}{6}$ inch long. *S. chenaultii*, a garden hybrid, is also good. It produces its pink bell-shaped flowers very freely and these are followed by rosy-purple fruits.

SYRINGA (LILAC)

The common lilac, *S. vulgaris*, one of the best loved in this country of all hardy shrubs, has, under cultivation, produced many beautiful varieties, a selection of which should be grown in every garden, leaving the wild typical form for woodland, hedgerows, and wilder places. Named varieties in both single and double form are now so numerous that it is impossible to give a selection of them here. Consultation of a reliable nurseryman's catalogue will reveal a wide selection. The Persian lilac, *S. persica*, is a small refined edition of common lilac, with flowers similar in shade and fragrance, a charming deciduous bush 4 to 6 feet high. *S. emodi* from the Himalaya has white flowers and leaves whitish beneath; *S. villosa* from China, rosy-lilac. Of several introductions from China most belong to the *villosa* type; the best of them I consider is *reflexa*, very distinct in its cylindrical, pendulous, or arching panicles of purplish-red blossoms, *S. julianae*, also from China, is a nice bush; flowers violet coloured, very fragrant.

The lilacs need a moist rich loam and full sunshine. All the pruning they require is a thinning out of crowded or weakly shoots as soon as the flowers are over. If time permits, all the flower trusses should be cut off as soon as their beauty is past, to prevent seed bearing. Plants grafted on privet should be avoided, and propagation should be done by cuttings or layers.

TAMARIX (TAMARISK)

Two kinds will very well represent the tamarisk, graceful plumose shrubs with minute, scale-like leaves, admirable for seaside localities.

T. tetrandra is a loose habited shrub up to 10 feet high, bearing profusely in May slender cylindrical racemes 1 to 2 inches long of tiny, bright pink flowers. *T. pentandra* (*hispida aestivalis*) blossoms in August and September, the large panicles of flowers being pale rosy-pink; a very beautiful shrub. It may, if desired, be kept low by pruning back in March the shoots that flowered the previous August. *T. tetrandra* must only be cut back if it gets too large.

Tamarisks are very easily propagated by putting in pieces of stem 8 to 12 inches long in the open ground in November. They are not particular as to soil, but love the sun.

TEUCRIUM FRUTICANS (SHRUBBY GERMANDER)

Being rather tender, this needs a south wall in less favoured districts; given shelter it grows into a pleasing evergreen 6 to 8 feet high, leaves ½ to 1½ inches long, white beneath. The flowers appear continuously from the axils of the uppermost leaves during summer and autumn, being lavender coloured, each flower with a large five-lobed lip ¾ inch long. It likes a light soil and is easily raised from cuttings.

TRICUSPIDARIA

Two evergreen shrubs or small trees found wild in Chile constitute this genus. The better one is *T. lanceolata*, a rounded, shapely bush 10 feet or more high with pointed, hard-textured leaves 3 to 5 inches long and perfectly pendulous urn-shaped flowers 1 to 1¼ inches long, of the richest crimson, broad at the base, tapering to a narrow mouth; the flowers form in the leaf axils in autumn, but do not open until May or June, each on a stiff stalk 2 to 3 inches long. The other, *T. dependens*, has shorter, broader leaves and white, more bell-shaped flowers. Both are tender and only succeed well to the south and west of London, on the west coast of Scotland, and in similarly moist, mild localities, but for years *T. dependens* grew well on a wall at Kew and flowered freely in late summer. The soil should be moist, deep, and free from lime. *T. lanceolata* likes moderate shade. Propagate by cuttings of half-ripened wood inserted in sandy peat and placed in a close frame with heat.

TROCHODENDRON ARALIOIDES

A Japanese evergreen shrub or small tree with shining green, pointed,

rhododendron-like, leathery leaves 3 to 5 inches long. Flowers borne from April to June in erect terminal panicles 2 to 3 inches high. Each blossom consists of a green, fleshy, hemispherical disc, on which the stamens are set like the spokes of a wheel. There are no sepals or petals, but the flowers, as well as being curious, are not without beauty. May be propagated by cuttings inserted during July in a warm propagating frame.

ULEX (GORSE)

The common gorse (*U. europaeus*) is not for the garden, but its double-flowered variety is one of the best of all shrubs for a dry bank or for poor gravelly soil. In such places it keeps dwarf and covers itself with golden-yellow blossoms every April, producing no seed. For autumn flowering, *U. gallii* and *U. nanus* are excellent under similar conditions; in rich soil they grow too coarsely and do not flower so well. A sunny position is essential for all three. The double gorse is increased by cuttings put in very sandy soil in an unheated frame in August, the others by seed. All are natives of Britain.

UMBELLULARIA (OREODAPHNE) CALIFORNICA

Naturally a big evergreen tree, this, near London, makes a large shrub, densely leafy and handsome. The leathery oblong leaves are 3 to 5 inches long, and when crushed give off an aromatic odour rather too strong and pungent to be altogether pleasant. The yellowish-green small flowers have little beauty. They are followed by purplish pear-shaped fruits 1 inch long. It is not suited for a bleak spot, but is otherwise hardy enough. It belongs to the same family as the bay laurel.

VACCINIUM

A large genus of shrubs related to the heaths, spread over the cooler regions of the northern hemisphere, abundant also on the mountains of South America. They have a juicy globose fruit ¼ to ½ inch wide, often edible. The whortleberry or bilberry (*V. myrtillus*) is an excellent fruit, properly prepared; the cowberry (*V. vitis-idaea*) and the fruits of some of the American species are also eaten. For the closely related cranberries see *Oxycoccus*. As ornamental garden shrubs, not many are of value, but *V. corymbosum* should be grown for its copious white or pale pink flowers in May and for its beautiful autumn tints. *V. stamineum* has very pretty

white flowers each ⅓ inch wide, bell-shaped, borne in racemes 1 to 2 inches long. North America. *V. arctostaphylos* from the Caucasus has similarly bell-shaped flowers, but not of so pure a white; its leaves, unusually large for a vaccinium, and up to 4 inches long, turn purple-red before falling. *V. canadense*, 1 foot high, and *V. pennsylvanicum*, rather taller, make a pleasant low ground cover.

All the above are low-growing and deciduous, but *V. ovatum* from western North America is a handsome small-leaved evergreen 10 feet high with glossy foliage and white flowers.

VERONICA

Except for one species, *V. elliptica*, found in various parts of South America, all the shrubby veronicas come from New Zealand. They are neat, very leafy, bushy evergreens, but a large proportion of them are on the borderline of hardiness, and such kinds a very severe winter will destroy. The commonest is *V. traversii*, a bush 6 feet or more high, with small leaves ½ to 1 inch long, and, in July, a wealth of racemes of small white flowers with purple-brown anthers. *V. buxifolia* and *V. darwiniana* are dwarfer shrubs of the same type, the latter rather glaucous. *V. anomala* is one of the hardiest, but of poor habit. *V. carnosula* is dwarf, usually 1 foot or even less high, handsomely glaucous. *V. cupressoides* is one of a curious and pretty group, with growth and foliage like a dwarf cypress or juniper. A very free-flowering species is *V. angustifolia*, 3 to 5 feet high, with long narrow leaves and racemes appearing continuously from July to November. Many beautiful hybrids have been raised from *V. speciosa*, but they are only suitable for the south and west; but a hardy and very good one is called Autumn Glory, which bears a succession of beautiful blue flowers from August onwards. The veronicas thrive in ordinary soil and are very easily propagated by summer cuttings placed under a handlight.

The shrubby veronicas are placed under the generic name of *Hebe* by some authorities.

VIBURNUM

In this group of shrubs there are a good many species worth growing, some for the beauty of their flowers, some for their handsome fruits, some

for both. They all love a deep loamy soil, moist but well drained. Cuttings made of leafy shoots in late July and August root readily in mild heat. The flowers of all viburnums are white or pale pink, and some of them, as the hydrangeas do, produce large showy sterile flowers along with small fertile ones on the same cluster.

The best flowering viburnum is *tomentosum plicatum*, a deciduous shrub from China, growing 8 feet high, and bearing hemispherical trusses 2 to 3 inches wide of pure white flowers (all sterile); *tomentosum* itself is also handsome; still more so is its variety *mariesii*, a shrub with wide-spreading horizontal branches; these two have flat flower clusters 4 inches or more wide, with the large sterile flowers on the margins only. Our native *V. opulus*, the guelder rose, is chiefly attractive for its bright red fruits and red autumnal colour; but its variety *sterile*, the snowball-tree, is to be preferred as a flowering bush. Other good fruit-bearers are *lobophyllum* and *betulifolium*, both red and from China. Nor is the British wayfaring-tree (*V. lantana*) to be despised, for it is pretty in flower, in fruit (red, finally black), and in its autumn tints. Very pretty and fragrant in blossom is *V. carlesii* from Korea, but liable to be much injured by late spring frosts. With *V. macrocephalum* it has produced a fine hybrid, *V. carlcephalum* which has larger clusters of white flowers. Also recommended is *V. fragrans*, which produces its white or pink-tinted and pleasantly scented flowers from November to March. *V. grandiflorum*, from the Himalaya, bears its fragrant rosy-pink flowers during February and March. It is a slow growing shrub of stiff habit and has proved to be quite hardy.

V. tinus, commonly known as laurustinus, is, and for centuries has been, one of the indispensable evergreens of gardens. Growing 6 feet or more high, its dense habit and richly green foliage is admirable as a screen or as a background. It is always cheerful looking and flowers at any time during winter and spring, according to the weather. It might very well replace a good many common laurels, privets, spotted aucubas, and suchlike, as it does well in moderate shade. A very distinct evergreen is *V. davidii* from China, a dwarf, compact bush with very dark green, conspicuously three-veined leaves 4 or 5 inches long, dull white flowers, and porcelain-blue fruits. Two good hybrid vibernums are *V. burkwoodii* evergreen, flowers pink and white and very fragrant; and *V. bodnantense*, deciduous, with rosy-white flowers in winter. A recent introduction of great promise.

VINCA (PERIWINKLE)

The two common periwinkles, *V. major*, with larger leaves 1 to 3 inches long, and *V. minor*, with smaller ones, are ornamental evergreen trailing shrubs with bright blue flowers 1 to 1½ inches wide, useful for shady places or even under some deciduous trees. *V. minor* has white and purple flowered varieties, also others with leaves variegated in white and yellow. In the warmer counties a third species, *V. difformis* (*acutiflora*), may be grown; it has pale lilac-blue flowers. All these are very easily propagated by cuttings.

VITEX AGNUS-CASTUS (CHASTE-TREE)

In colder districts this needs a wall, and it is always best in full sunshine and in hot summers. Its leaves are composed of five or seven radiating, narrowly lance-shaped leaflets 2 to 6 inches long. The flowers come in September, or even later, on large panicles; they are small, pale violet or lilac, and fragrant. The whole plant has an aromatic odour. It likes a light warm soil. Propagate by cuttings of ripened wood.

WISTARIA

W. floribunda and *sinensis* are, of course, two well-known climbers, but they may, by a summer and winter pruning, be kept as shrubs a few feet high. Plants are frequently imported from Japan in pots and may be planted out in good loam. As they root into the new soil, long rambling shoots will be pushed forth; these may be shortened back during the summer, and in winter cut back to within a few inches of the previous year's wood. The flower buds are formed at the base of the shoots and give a wealth of gorgeous blossom in May and early June. *W. floribunda* var. *macrobotrys*, with its racemes sometimes over 3 feet long, should be grown 6 to 8 feet high to allow of their proper display.

XANTHOCERAS SORBIFOLIA

A deciduous shrub or small tree related to the horse-chestnut, with pinnate leaves 5 to 8 inches long, and flowers in erect panicles 6 or 8 inches high; each blossom is about 1 inch wide, the five petals being white with a reddish stain at the base. Fruit like a small chestnut. A handsome bush from north China, requiring a rich loamy soil, and propagated either by root cuttings or by seed.

YUCCA

Belonging to the lily family, and quite distinct in general aspect from other hardy shrubs, the yuccas are almost indispensable. *Y. recurvifolia*, with its thick stems ringed with the scars of fallen leaves, its recurving leaves 1½ to 2 feet long, and its erect panicles 2 to 3 feet high, of creamy-white flowers, makes one of the most striking features of the late summer garden. *Y. gloriosa* has stiff, never recurved leaves, and a narrower but taller inflorescence. Both these grow 6 to 8 feet high. *Y. flaccida* and *filamentosa* do not develop stems above ground-level, and keep 1½ to 2 feet high; they also have fine panicles of blossom. In the south and south-west may be grown *Y. whipplei*, the most magnificent of all yuccas. It is stemless but develops a large hemispherical mass, 3 to 5 feet wide, of narrow spine-tipped leaves, from the centre of which there ultimately springs a stout pole-like inflorescence up to 15 feet high, bearing at the top hundreds of flowers, white tinged with green and tipped with purple. The plant dies after blossoming. The yuccas like a place fully in the sun, a loamy soil, and do well on a pile of earth and stones mixed. *Y. recurvifolia* is the most easily grown and most satisfactory.

ZANTHORHIZA APIIFOLIA (YELLOW ROOT)

A deciduous shrub 1 to 2 feet high, with creeping roots, by means of which it spreads. The leaves are composed of three or five deeply toothed leaflets each 1 to 3 inches long. Flowers lurid purple, only ⅛ to ¼ inch wide, produced in panicles 3 to 5 inches long in spring. The roots are yellow. Native of the east United States.

ZANTHOXYLUM

Aromatic deciduous shrubs belonging to the rue family, of no great beauty, the best, perhaps, of some half a dozen kinds in cultivation being *Z. planispinum*. This is 6 feet and upwards high, has pinnate leaves, stems armed with broad flat spines, small yellowish flowers, and round red fruits ⅛ inch wide, each containing one black seed. When bearing a good crop of fruits it is quite handsome, but they need a hot summer for their development. *Z. piperitum* is a pretty foliaged shrub, the leaves, whilst only 3 to 6 inches long, having eleven to as many as twenty-three small leaflets. *Z. americanum* is the toothache-tree, or prickly ash.

ZENOBIA

A. speciosa is a beautiful semi-deciduous shrub of the heath family, usually 3 or 4 feet high, with dark shining green leaves about 2 inches long. The flowers, bell-shaped, pure white, pendulous and rather like large lily-of-the-valley blossoms, are clustered on the shoots, several inches of which they cover. *Z. pulverulenta* has glaucous white foliage and young shoots, and is even more beautiful than *speciosa*. Both bloom in June and July. They love a peaty soil, or, failing that, a light sandy one from which lime is absent. Best propagated by seeds.

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W. J. BEAN

By the time he retired in 1929, W. J. Bean had served for forty-six years at the Royal Botanic Gardens, Kew, for the last seven years as Curator. Early in life he became interested in hardy trees and shrubs, on which he eventually became one of the world's leading authorities. His best-known book, on which he was engaged for many years, was *Trees and Shrubs Hardy in the British Isles,* and he was also the author of *Trees for Amateurs* and *History and Development of the Royal Botanic Gardens, Kew.* A Yorkshireman, he died in 1947 at the age of eighty-two.

S. A. PEARCE

Deputy Curator at Kew, S. A. Pearce seems to be following in Mr Bean's footsteps and has charge of the Arboretum and Botanics section, embracing some two hundred and fifty acres devoted chiefly to tree and shrub collections and ornamental planting, comprising well over 20,000 specimens. He was born in 1906, both his father and grandfather being noted horticulturists.

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